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# STATUS OF PLANNING FOR THE 2000 CENSUS

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## HEARING

BEFORE THE

SUBCOMMITTEE ON CENSUS, STATISTICS AND  
POSTAL PERSONNEL

OF THE

COMMITTEE ON  
POST OFFICE AND CIVIL SERVICE  
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

—  
JANUARY 26, 1994  
—

**Serial No. 103-30**

Printed for the use of the Committee on Post Office and Civil Service

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# STATUS OF PLANNING FOR THE 2000 CENSUS

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WEDNESDAY, JANUARY 26, 1994

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON CENSUS, STATISTICS  
AND POSTAL PERSONNEL,  
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:36 a.m., in room 311, Cannon House Office Building, Hon. Thomas C. Sawyer (chairman of the subcommittee) presiding.

Members present: Representatives Sawyer and Wynn.

Mr. SAWYER. Good morning. Welcome to the latest installation of what my ranking member has come to call "census seminars."

Today we would like to talk about the Census Bureau's recent report. The Appropriations Committee asked for the report because of its continued concern about the scope and the pace of the planning efforts. The primary testing of that planning effort and the preparation for the next census will take place in a year. At the last hearing we took a look at whether the plans addressed the concerns that we have heard expressed throughout the Congress about accuracy and cost.

The Bureau is going to have to cover a lot of ground in a very short period of time. So, toward that end, we wanted to look today at how things are going and whether there are legislative changes that might be needed.

The Department of Commerce is considering whether or not any laws will need to be changed to allow use of sampling in the census. I have a sense, at least from a lay position, that there is unanimity among lower courts that title 13 unequivocally permits the use of sampling so long as it is in addition to more traditional counting techniques, to improve the accuracy of the final numbers, rather than to purely supplement the use of those traditional techniques.

To that end, my sense is that it probably doesn't justify tampering with the law that has been interpreted in detail to this point. But the truth is that we all face lawsuits, the Bureau faces many challenges and it has got to move quickly. So, for each of the proposed legislative initiatives, I hope that we are going to be able to look in some detail as to how that might improve the count.

In any case, we are pleased to have with us again today Dr. Harry A. Scarr, who is the Acting Director of the Census Bureau, and Mr. William Hunt, the Director of Federal Management Issues, General Government Division, General Accounting Office.

For the purposes of the record, could you each identify the colleagues with you today.

If we could proceed first with Dr. Scarr and then Mr. Hunt.

[The prepared statement of Hon. Thomas C. Sawyer follows:]

PREPARED STATEMENT OF HON. THOMAS C. SAWYER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Good morning. I'd like to welcome our guests and witnesses to the subcommittee's first hearing of 1994.

Today we want to talk about the Census Bureau's recent report to Congress. The Appropriations Committee asked for the report because of its continued concern about the scope and pace of the Bureau's 2000 planning efforts.

The Census Bureau's primary test in preparation for the next census will take place one year from now. At our last hearing, we considered whether plans for that test address congressional and other stakeholder concerns about accuracy and cost. Specifically, we talked about three challenges that lay ahead:

1. The Bureau must demonstrate to its many stakeholders that the new methods effectively address concerns about accuracy and cost;
2. The Bureau must demonstrate that the benefits outweigh the costs of a decade long data collection system; and
3. The Bureau must demonstrate that it can cover a lot of ground in a relatively short time frame.

In order to address congressional concerns adequately, the Bureau should continue to define carefully its plans for the 1995 test. It also must ensure that test is designed to allow for clear answers to the concerns we all have about census accuracy and cost.

An additional challenge is to let Congress know well in advance whether legislative changes are needed to improve the census. Congress will not take lightly the potential areas for legislative action that the Census Bureau will review today. The need for changes in the law should be well thought out, with a specific discussion of the goals that those changes would achieve.

In the report it submitted to Congress, the Department of Commerce indicated that it is considering whether any laws must be changed to allow a greater use of sampling in the census. In my opinion, the law unequivocally permits the use of sampling, in addition to more traditional counting techniques, in order to improve the accuracy of the final numbers.

The case law on this issue is consistent and straightforward. In addition, both the Congressional Research Service and the National Academy of Sciences have concluded that title 13 of the United States Code permits the use of sampling to enhance the initial effort to count every person in every household directly.

While the Supreme Court has not yet had an opportunity to address this issue, the unanimity among lower courts that have considered it weights heavily in favor of a flexible interpretation of current law.

Concerns about lawsuits in the absence of a finely-tuned statute are understandable. In my opinion, those concerns do not justify tampering with a law that has been interpreted in detail by many courts.

The census will always be the subject of lawsuits. But the likelihood of successful lawsuits will be reduced greatly if the design of the 2000 census is supported by a thorough research and testing program that aims to improve the accuracy of the final numbers.

The Bureau faces many challenges in the coming year. It must move quickly to answer legitimate questions about its plans in order to build confidence about the upcoming tests and their results. The Bureau must also determine what legislative changes it needs. For each of the proposed legislative initiatives, I look forward to the Bureau's explanation of how that action might improve the decennial count.

We are pleased to have with us Dr. Harry A. Scarr, Acting Director of the Census Bureau and Mr. William M. Hunt, Director of Federal Management Issues, General Government Division, General Accounting Office.

**STATEMENT OF HARRY A. SCARR, ACTING DIRECTOR, BUREAU OF THE CENSUS, ACCCOMPANIED BY ROBERT TORTORA, ASSOCIATE DIRECTOR, STATISTICAL DESIGN, METHODOLOGY AND STANDARDS, CENSUS BUREAU; AND WILLIAM M. HUNT, DIRECTOR, FEDERAL MANAGEMENT ISSUES, GENERAL GOVERNMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE, ACCCOMPANIED BY JACK KAUFMAN, SENIOR EVALUATOR, GAO**

Mr. SCARR. Thank you, Mr. Chairman.

At my left is Robert Tortora who is the Associate Director for Statistical Design Methodology and Standards at the Bureau of Census and who is the main census official who is in charge of the design phase of the census planning that has been going on for some days.

Mr. HUNT. Mr. Chairman, with me on my right is Jack Kaufman. He has been leading our census work for many, many years. And I am glad to have him here with me again today.

Mr. SAWYER. Welcome to you all.

Dr. Scarr.

Mr. SCARR. Mr. Chairman, it is a pleasure to be here today to continue to discuss the status of the Census Bureau planning for the 2000 census. You asked that the basis of my testimony be the status report required by the House conference report on the fiscal year 1994 appropriation for the Census Bureau. My written testimony is identical to that report and I ask that it be included in the record.

Mr. SAWYER. Without objection.

Thank you.

Mr. SCARR. Let me begin by highlighting some of the major themes of that report. Early research and development activities have identified fundamental reforms that offer promise for addressing the two largest problems of recent censuses: Persistent differential undercount, especially for minorities and certain geographic areas, and spiraling costs. I will describe these fundamental reforms in a moment.

Second, planning efforts for the 2000 census are on schedule and, in my opinion, demonstrate that a critical and open review of program objectives can reinvent the way the Federal Government responds to the needs of its customers. As Secretary Brown indicates in his letter, we are examining reallocation of funds within the Bureau to provide more to the 2000 planning efforts than the \$8 million Congress originally allowed.

Third, our planning effort for the 2000 decennial census have been open to all new ideas, including those requiring legislative changes. Several legislative changes are now under review and may be proposed.

Fourth, our openness to new ideas has been aided by the much earlier and larger role that both the Secretary of Commerce and the Office of Management and Budget have played and will continue to play in planning the 2000 census.

Fifth, early attention by the OMB, the Commerce Department, and other Federal agencies has led to promising new possibilities for meeting data needs. We have developed a proposal for an ongoing continuous measurement system. This would involve a large-

scale survey to collect the long form data traditionally collected in the census, thus simplifying and opening up data resources.

Sixth, the Census Bureau and the U.S. Postal Service established joint planning and development efforts for the 2000 census in 1990 and we have made significant progress on several fronts. Of particular note is the program to share address and geographic information that will meet critical needs of both agencies, including the Census Bureau's need to maintain a nationwide master address file linked with a TIGER database.

The June 1993 pilot test was a success. The Census Bureau and Postal Service exchanged address information and used that information to identify addresses missing from the Census Bureau's files and streets that were missing from our TIGER database.

As a second significant step toward full cooperation, both agencies exchanged address information for the 1985 census test sites. We also jointly identified areas for further cooperation to improve census taking methodology. The results of all these activities are described in detail in the Secretary's submission to the Congress.

Mr. Chairman, let me now describe the fundamental reforms we plan to test in the 1995 census test in New Haven, CT; Paterson, NJ; Oakland, CA; and in six parishes in northwestern Louisiana, Bienville, DeSoto, Jackson, Natchitoches, Red River, and Winn.

The purpose of the 1995 test is to provide information that will help the Census Bureau to make a final determination about the 2000 census design by December 1995. There are seven fundamental reforms that we believe will improve accuracy, particularly for minority groups in certain geographic areas.

Many of us believe, as you know, that counting methods have exhausted their potential for enumerating our diverse population. They are expensive and marginally effective in counting people who live in nontraditional situations, have literacy or language problems, or for whom traditional methods do not work. Therefore, there is little potential for reducing the differential undercount while containing census costs solely using traditional counting methods alone. Planning for the 2000 census must take advantage of other methods, in combination with counting techniques, to decrease the differential undercount.

First, we will focus on improving methods to count historically undercounted populations by identifying barriers to enumeration such as unusual housing situations, mobile populations, or limited English ability groups; and by using innovative enumeration methods aimed at alleviating the effects of these specific conditions on the undercount.

Second, we are researching the use of an integrated coverage measurement program to produce census results that will reduce the undercount. This means that we will test the use of statistical techniques, administrative records, and the like, to estimate the number and types of persons missed in the census while the census is being conducted. We would use statistical estimates to account for the missed persons so that the combined or integrated results will be available by legally mandated deadlines.

Third, pending the results of a test we are evaluating now, we may mail out Spanish-language questionnaires in areas of large concentrations of Spanish-speaking households. This has the poten-

tial of improving the response rates, coverage, and overall data quality in such areas.

Fourth, we will use procedures that concentrate on counting components of the homeless population where they obtain services such as shelters and health and food service facilities. We plan to do this instead of the "S-Night" procedures of the 1990 census, which included counting components of homeless on the streets at night.

Fifth, we believe that by changing the way we ask people to list the residents at their addresses, they will be better able to include persons that may have been missed in the past. We plan to make census questionnaires more widely available than in the past. We will place them in accessible locations so that households that do not receive a questionnaire or individuals who may not be included on a return questionnaire may pick them up, complete them, and return them conveniently.

We are concerned about potential duplication from making questionnaires widely available. The development of real-time automated matching to improve census coverage, which is currently underway, will support this coverage-oriented activity and is essential to our commitment to count all who want to be counted. This linkage system can be used to support integrated coverage measurement, the use of administrative records, data collection by telephone, and other activities that improve the coverage of the census.

Now, Mr. Chairman, let me describe seven fundamental ways that are designed primarily to reduce costs.

First, we may contact only a sample of housing units for which a questionnaire is not returned. Sampling for nonresponse follow-up has many advantages. It decreases the workload for the most costly component of the 1990 census, nonresponse followup; second, it requires few enumerators and/or less time, leading to better data quality; and third it allows for time and resources for employing coverage measurement methods that can be used to produce a single set of census results called for in a one-number census.

Second, we will use a respondent-friendly design, including multiple mailings to households to increase response.

Third, we have identified and begun testing improved technologies to speed collection and processing of census data and to give householders greater flexibility in how they can respond to the census.

Fourth, we will work with the U.S. Postal Service to identify vacant and nonexistent housing units.

Fifth, with the development of Data Capture System 2000, we will be able to convert respondent-entered information directly to computer-readable form. This provides major opportunities for streamlining census processing operations.

Sixth, over the next several months, we will seek ways to involve State, local, and tribal governments in taking the census. A major goal of these initiatives will be to explore the potential of using administrative records and other existing information to reduce costs and improve the quality of the census.

In addition, we are looking at numerous ways to increase U.S. Postal Service involvement in the census. I have already discussed Postal Service involvement in creating the Master Address File and

in the identification of vacant and nonexistent housing units. And other areas are discussed in the written testimony.

Seventh, we plan to test a matrix sampling scheme that would require most respondents receiving sample questionnaires to answer fewer questions than if they had received a long form. This could have beneficial effects on response rates and cost reduction.

Mr. Chairman, I believe these fundamental reforms have the potential to make the census more accurate and less costly. We must attempt to include in the census every resident in the United States.

After counting everyone who wants to be counted, we plan to use a combination of counting, sampling, and estimation procedures to account for everyone else. This would be the most dramatic departure being considered for the 2000 census and has the biggest potential for improving accuracy and reducing costs. However, as I mentioned in my testimony before the subcommittee last October, the increased use of sampling and estimation will introduce new uncertainty into the data for areas with small populations such as census blocks and tracts, small towns, and less populous counties.

Statistical methods cannot make a bad count good. They can only make a good count better. That is why some of the reforms that are directed at accuracy and cost also make it easier for people to include themselves in the census. This includes making questionnaires widely available, multiple contacts with housing units, and using advanced technologies to contact persons or to allow them to contact us.

These reforms will help us do a better job in meeting our commitment to count everyone who wants to be counted. Of course, we would design a promotion campaign that increases the likelihood that people will want to be included in the census.

Mr. Chairman, that concludes my testimony.

[The prepared statement of Mr. Scarr follows:]



**THE SECRETARY OF COMMERCE**  
Washington, D.C. 20230

January 25, 1994

The Honorable Thomas C. Sawyer  
Chairman, Subcommittee on Census,  
Statistics and Postal Personnel  
Committee on Post Office and Civil Service  
House of Representatives  
Washington, D.C. 20515-6245

Dear Mr. Chairman:

Thank you for this opportunity to report the status of our research and development program for the 2000 decennial census. We are working diligently to produce a census that is simpler, cheaper, and more accurate. It is my pleasure to update you about this vital effort to identify fundamental changes to the census program.

The primary objective of this report is to address specific concerns expressed in the House-Senate conference report on the 1994 appropriations. The key messages I wish to convey related to these concerns are as follows:

1. The Department of Commerce and the Office of Management and Budget (OMB) have played, and will continue to play, a much earlier and larger role in planning this census than they have for any previous census.
2. Early research and development activities have identified fundamental reforms that offer great promise for addressing the two largest problems of recent censuses--persistent differential undercounts, especially for minority groups and certain geographic areas, and spiraling costs. In 1995 we will test advanced sampling and estimation procedures to reduce the differential undercount. In contrast to previous censuses where all households not returning a questionnaire by mail received personal visits by census enumerators, a sample of nonrespondents will be visited. This will reduce the cost of collecting information for nonresponding households. To make the census simpler, the questionnaires for our 1995 test will be easier for respondents to complete and questionnaires will be placed in convenient locations for pickup.
3. Early attention by the OMB, my department, and other Federal agencies in clarifying the appropriate role of the decennial census in meeting their data needs, and in exploring new ways to meet these needs, has led to exciting new proposals, such as collecting sample data using multiple forms.

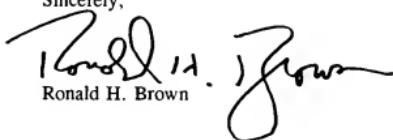
4. Planning efforts for the 2000 decennial census are on schedule and, in my opinion, demonstrate that a critical and open review of program objectives can reinvent the way the Federal Government responds to the needs of its customers.
5. The planning effort for the 2000 decennial census has been open to all new ideas, including those that may require legislative changes. Several of these are now under review and, as appropriate, will be proposed.
6. In response to the suggestions of several Members of Congress, joint 2000 decennial census planning efforts with the U.S. Postal Service were formally established in 1990, and significant progress has been made on several fronts. Of particular note is the program to share address and geographic information that will meet critical needs of both agencies, including the Census Bureau's need to create and maintain a nationwide master address file.

In closing, I note that the Census Bureau is now making final decisions for major 1995 field tests that will provide information key to choosing the final design for the 2000 decennial census. If fundamental reforms are to be made through careful research and testing, it is imperative that preparations for those tests be sufficiently funded this year. We are examining reallocation of funds within the Census Bureau to meet those needs.

Thank you for your continuing interest in the 2000 decennial census planning efforts.

Sincerely,

Ronald H. Brown

A handwritten signature in black ink, appearing to read "Ronald H. Brown". The signature is fluid and cursive, with "Ronald" on the top line and "H. Brown" on the bottom line.

Enclosure

**REPORT TO CONGRESS ON THE STATUS OF THE YEAR 2000  
DECENNIAL CENSUS PLANNING EFFORTS**

**INTRODUCTION AND EXECUTIVE SUMMARY**

This document responds to the request from the House and Senate Appropriations conference committee in its report on the 1994 appropriation for Year 2000 Decennial Census planning. The specific concerns of the conference committee are listed below, along with brief summaries of our response to each concern.

- o **Increased Role of the Secretary of Commerce and Office of Management and Budget (OMB) in Planning for the Year 2000 Decennial Census**--Section I describes how the Department of Commerce and the OMB have played, and will continue to play, a much larger role in planning this census than they have for any previous census.
- o **Improving Accuracy**--Section II documents fundamental reforms identified through the research program that can address one of the major problems of recent censuses--inaccurate results due to undercounts, especially for minority groups and certain geographic areas. While the conference report did not list this concern, the initial House appropriation report did, and it has been a major concern of the Congress for many years.
- o **Reducing Cost**--Section III documents how early research and development activities for the 2000 decennial census have identified fundamental reforms that offer great promise for addressing the other major problem of recent censuses--spiraling costs.
- o **Scope of Census Content**--The conference report requested detailed information about:
  - The active role of the Secretary of Commerce and OMB in ensuring Federal, state, and local data requirements are considered in the planning effort.
  - Consideration of absolute data requirements of Federal departments and agencies in the planning effort.
  - Consideration of data needs of state and local governments in the planning effort.
  - Reimbursement for data collection by Federal departments and agencies for a portion of the costs of planning for and conducting the 2000 decennial census.

Section IV describes how early attention by the OMB, the Department of Commerce, and other Federal agencies has been instrumental in clarifying the appropriate role of the decennial census in meeting their data needs. Exploring other ways to meet these needs has produced exciting new proposals that can simplify the decennial census effort.

- o **Status of Year 2000 Decennial Census Planning Efforts**--Section V describes the key activities and accomplishments to date, along with objectives for the planned 1995 census field tests. A summary of the fundamental changes being proposed for testing in 1995 is shown in Table 1 on the next page.
- o **Proposals for Legislative Changes Necessary to Address the Concerns of Congress**--Section VI describes those new ideas that may require legal changes and for which, as appropriate, legislative initiatives will be proposed.
- o **Progress Being Made to Promote Cooperative Efforts with the U.S. Postal Service (USPS) Including Efforts to Simplify and Lower Costs of the Next Decennial Census**--Section VII describes how joint census planning efforts with the USPS were formally established in 1990, and how significant progress has been made on several fronts. Of particular note are efforts to share address and geographic information that will meet critical needs of both agencies, including the Census Bureau's effort to create and maintain a nationwide master address file.

In addition to meeting the overarching objectives of reducing the differential undercount and census costs, the research and development program has also identified a number of ways to simplify the public's participation in the census. These include the use of a redesigned questionnaire that will be easier for people to complete; offering easier access to paper questionnaires and providing the opportunity to respond by telephone; and reducing the length of a typical questionnaire. More details about these efforts are discussed in appropriate sections of this report.

Table 1: FUNDAMENTAL CHANGES AND THE 1995 CENSUS TEST

TITLE	PROPOSED FUNDAMENTAL CHANGE FROM 1990	MAJOR GOAL	
		REDUCING COST	REDUCING DIFFERENTIAL UNDERCOUNT
The Use of Sampling and Integrated Coverage Measurement to Reduce the Differential Undercount	To use advanced sampling and estimation procedures to reduce the differential undercount.		x
The Use of Sampling of Nonrespondents to Reduce Census Costs	To use advanced sampling and estimation procedures to reduce the cost of collecting information for nonrespondents.	x	
Coverage Questions for Complete Listing of Household Members	To use innovative approaches to ensure persons are included on census forms.		x
Making Census Questionnaires Widely Available	To ensure that persons who do not receive a questionnaire in the mail have census questionnaires available to them at convenient locations.	x	
Real-Time Automated Matching to Improve Census Coverage	To provide the technological capability necessary for using advanced, special, direct counting methodologies.		x
Targeted Methods to Count Historically Undercounted Populations and Geographic Areas	To use counting methodologies that are appropriate for specific populations or areas of interest.	x	
Mailout of Spanish Language Questionnaires	To initially mail a Spanish language or bilingual questionnaire to households in areas that have high concentrations of Spanish-speaking households.	x	x
Counting Persons With No Usual Residence	To use a direct counting method for homeless persons that utilizes the places where they obtained services.	x	
Respondent-Friendly Questionnaire Design and Implementation Methods	To use an easy-to-fill-out questionnaire with multiple mail contacts.	x	
Automation of Data Collection	To use advanced technologies to contact persons or to allow them to contact us.	x	
Using the Postal Service to Identify Vacant and Nonexistent Housing Units	To use first-class postal returns to alert us to vacant housing units or mistakes on our address list and to count and correct them early.	x	
Data Capture System for the 2000 Decennial Census (DCS 2000) Using Electronic Imaging	To provide the technological capability necessary for using innovative data collection methodologies and processing systems.	x	
Cooperative Ventures	To use the resources of other Federal agencies, state and local governments, and private and nonprofit organizations in partnership in taking the census.	x	x
Collecting Sample Data Using Multiple Sample Forms	To use different questions on a number of forms to collect "long form" data.	x	

## **I. INCREASED ROLE OF THE SECRETARY OF COMMERCE AND THE OFFICE OF MANAGEMENT AND BUDGET IN PLANNING FOR THE YEAR 2000 DECENTNIAL CENSUS**

In November 1990, the Secretary of Commerce established the "Task Force for Designing the Year 2000 Census and Census Related Activities for 2000-2009." The purpose of the Task Force is to study fundamental changes to the methodologies that have been common to decennial census designs for the past three decennial censuses. With the support of OMB and the Congress, funding was approved beginning in 1991 for unprecedented early planning for the next census and the decade beyond.

The Task Force is composed of three committees:

- o The Technical Committee is responsible for identifying key research questions, formulating testing objectives, and evaluating research findings. Committee members include Department of Commerce officials, Census Bureau management, and senior technical staff from three other statistical agencies.
- o The Policy Committee is responsible for the review of design alternatives from the standpoint of concerns about their direct, or indirect, effects on society at large, as manifested through agencies of the Federal Government. Members are officials from Executive Branch departments and agencies, including the OMB.
- o The Advisory Committee serves as a vehicle to identify and communicate to the Secretary of Commerce the concerns of non-Federal and nongovernment stakeholders in the design of the census. Members are representatives of various organizations, particularly those with concerns about census accuracy and data for small areas. The committee also includes, as ex officio members, a representative from the U.S. Postal Service and staff from the House and Senate authorizing committees.

By January 1995, each of these committees will make final recommendations about the 2000 decennial census design to the Secretary of Commerce.

In addition to the Task Force, there are two National Academy of Sciences panels to advise the Secretary of Commerce on options for the 2000 decennial census and the decade beyond. The first of these panels was established by the Census Bureau to provide independent review of the technical and operational feasibility of design alternatives and tests as they are developed by the Technical Committee and conducted by the Census Bureau. This panel, called the "Panel to Evaluate Alternative Census Methods," issued its interim report, "A

Census That Mirrors America," in September 1993 and is scheduled to issue its final report by the fall of 1994.

The second National Academy of Sciences Panel deals with "Census Requirements for the Year 2000 and Beyond" and is independently examining the appropriate role of the decennial census within the Federal statistical system. This panel was established at the direction of our House Appropriations Subcommittee. The panel issued an interim report, "Planning the Decennial Census," in May 1993 and is scheduled to issue its final report by November 1994. The interim reports from both panels have been provided to the Secretary, to OMB, and to the Congress.

Additional efforts by the Secretary and the OMB relate to their statutory and regulatory duties regarding the questions to be asked in the decennial census. Their efforts on this front are described in Section IV below.

## II. IMPROVING ACCURACY, PARTICULARLY FOR MINORITY GROUPS AND CERTAIN GEOGRAPHIC AREAS

The 1990 decennial census invested heavily in intensive methods to **count** the population. Counting methods have exhausted their potential for enumerating our diverse population. They are expensive and only marginally effective in counting persons who live in nontraditional situations, have literacy or language problems, are highly mobile, or for whom traditional methods do not work for any number of reasons. Therefore, there is little potential for reducing the differential undercount and containing census costs solely using traditional counting methods alone. The interim report of the National Academy of Sciences Panel to Evaluate Alternative Census Methods recommends that the dual objective of reducing the differential undercount and containing costs requires use of sampling and statistical estimation.

Planning for the 2000 decennial census must take advantage of other methods, in combination with such counting techniques, to decrease the differential undercount. In 1990, the main way we measured the undercount was the Post-Enumeration Survey (PES). In the PES, we interviewed an independent sample of the population, and used the results to estimate the number and characteristics of persons missing from the census. Issues of timing, operational complexity, and estimation methods prohibited using these results for adjusting the census counts. However, we believe that these deficiencies in the PES can be addressed, and that we can employ different and improved statistical procedures to reduce the differential undercount.

Compared to using counting methods alone, applying statistical methods requires careful implementation of special procedures to improve the results of a census. Statistical methods require complex technical calculations and assumptions that will undoubtedly be controversial, even among statisticians. Since statistical methods apply to only a sample of the population, reallocating efforts and funds from the **counting** portion of the census to **statistical** activities could, in fact, reduce the overall cost of the decennial census while at the same time reducing the differential undercount.

Statistical methods cannot make a bad count good; they can only make a good count better. We still must have a census where all persons have the opportunity to be counted. Therefore, we have been researching ways to improve participation overall and to facilitate the participation of undercounted groups. We have also identified ineffective counting-based methods and procedures to learn how to improve or eliminate them. This allows resources to be saved or reallocated to the development of statistical methods that will improve census coverage.

Use of Sampling and Integrated Coverage Measurement to Reduce Differential Undercounts

First and foremost, we are committed to using an integrated coverage measurement methodology to produce a census that reduces the differential undercount. To this end, the Census Bureau is investigating a new way of taking the Decennial Census of Population and Housing. The motivation is that the Census Bureau has measured an undercount in the past six censuses. For example, the Census Bureau estimates that the 1990 census population count was 1.6 percent too low overall, and the count for Blacks was 4.4 percent too low. Although there have been steady successful improvements in counting methods since 1940, the percentage error in the count for Blacks has remained approximately 3 to 4 percent greater than for the country as a whole. As counting gets more complex with the increasing diversity and mobility of the population, the effectiveness of additional improvements in counting is approaching diminishing returns. Also, counting has become increasingly expensive as the Census Bureau makes additional attempts to contact households, and as the cost of our temporary labor force rises.

We will use statistical techniques, administrative records, and the like to estimate the number and types of persons missed in the census while the census is being conducted. We will use statistical estimates to account for the missed persons, so that the combined (integrated) results will be available by the legally mandated deadlines.

We are currently doing research to determine what method or methods will be used to produce these estimates. The integrated coverage measurement proposal currently under consideration was developed as a hybrid of three basic methodologies; we called these the PES, CensusPlus, and SuperCensus. Considerations of these proposals identified particular strengths and weaknesses of each. These considerations also identified a methodology that could incorporate the best features of each.

The integrated coverage measurement process is based on viewing the census coverage problem as consisting of two basic components—persons missed due to missing a whole housing unit, and persons (possibly whole households) missed within enumerated housing units. The first component will be measured using an independent listing of housing units before the census in a sample of census blocks. The second component will be measured using an intensive independent interview followed by a dependent reconciliation. The results of the two interview processes will then be combined in an estimation stage to produce final estimates of the correct population.

The use of administrative records is also being considered for this process. Administrative records may be obtained and matched to the census enumerations before the independent coverage measurement interview. Persons from the administrative record files who are not matched to a census enumeration will be enumerated in the reconciliation phase of the interview process.

#### Coverage Questions for Complete Listing of Household Members

We will change the way we ask people to list the residents at their address, so that they are better able to include persons who may have been missed in the past due to error or tenuous attachment to the household. We are currently engaged in an extensive program of research that will be used to modify the 1995 Census Test questionnaire.

#### Making Census Questionnaires Widely Available

In past decennial censuses, we have avoided allowing uncontrolled distribution of census questionnaires because of the need to ensure a one-to-one correspondence between questionnaires and our address control list. While this ensured operational efficiencies in the census, it may have had detrimental impacts on coverage and most certainly damaged the credibility of the census. For the 2000 decennial census--with a tryout in the 1995 Census Test--we plan to place questionnaires in accessible locations (post offices, convenience stores, local community gathering places, and the like) so that households or individuals may pick them up, complete them, and return them conveniently. This will make the census simpler for respondents. While we are concerned about the duplication this could cause, development of real-time automated matching to improve census coverage (see the next paragraph) will support this coverage-oriented activity and is essential to our commitment to count all who want to be counted.

#### Real-Time Automated Matching to Improve Census Coverage

In past censuses, there have been a number of cases in which we had to check addresses or persons against our control and data files. The process to do this matching, for the purposes of unduplicating or adding people to the census, was partially automated with a large clerical component. In order to support the new census design proposed for the 1995 Census Test, these capabilities must be greatly expanded. We will develop, to the extent possible, an automated, interactive, and real-time record linkage and matching system. It will support several new design features: integrated coverage measurement; making questionnaires widely available; special methods, such as checking against administrative records; data collection by telephone; and other activities that improve the coverage of the census.

#### Targeted Methods to Count Historically Undercounted Populations and Geographic Areas

Based on extensive ongoing research, we will be able to: (1) identify areas where barriers to enumeration exist--such as unusual housing situations, mobile populations, or linguistically isolated groups; and (2) use innovative enumeration methods targeted at these specific conditions.

Mailout of Spanish Language Questionnaires

Mailing Spanish language questionnaires has the potential to improve the response rates, corresponding coverage, and overall data quality in areas with large concentrations of Spanish-speaking households. While we have made Spanish questionnaires available in the past, they have never before been sent during the initial mailout. We are currently conducting a test to determine if, in fact, there are benefits to such a mailing. We are also comparing the effectiveness of a bilingual questionnaire versus sending separate Spanish and English questionnaires. The results will be used to determine whether, and how, to use this mailing in the 1995 Census Test. Further research will also be done to ensure the subject matter concepts are appropriately translated into Spanish.

Counting Persons With No Usual Residence

Specifically, we propose to forego the "S-Night" procedures of the 1990 census, particularly the procedures to count components of the homeless population on the street at night. Instead we will use procedures that concentrate on counting these groups where they obtain services such as in shelters, and health and food service facilities. This type of change has been suggested by many experts and the details will be developed in consultation with those knowledgeable about this population.

### III. REDUCING COST

The cost of conducting the decennial census has increased dramatically in the past few decades. The Census Bureau is firmly committed to studying fundamental changes to past census procedures for which an overriding goal is reducing the cost of future censuses. To support this effort we have designed and built highly complex automated cost models to investigate census design alternatives and operational improvements to ensure a cost effective census. These models utilize thousands of equations to depict the census and its operational interrelationships.

Based on our research to date we have identified several major changes in census operations and processes that are expected to yield significant cost savings:

#### Use of Sampling of Nonrespondents to Reduce Census Costs

At the conclusion of our initial attempt at getting completed census questionnaires--mostly via mail--from all households, we are planning to sample the addresses for which we do not have responses. Sampling for nonresponse follow-up has many advantages: (1) it decreases the workload for the most costly component of the 1990 census, nonresponse follow-up; (2) it requires fewer enumerators and/or less time, which will yield higher caliber employees and better data quality; and (3) it allows more time and resources for employing coverage measurement methods that can be used to produce the single set of census results called for in a "one-number" census (a procedure that incorporates results from counting, assignment, and estimation methods in the official population totals).

The Census Bureau has developed a proposal for testing sampling for nonresponse follow-up in the 1995 Census Test. This test will implement both a housing unit sample and a block sample in each site to produce estimates of nonrespondents. The sampling rate in each site will be about 30 percent of the total nonresponse universe.

The development of this proposal initially gave consideration to testing some combination of truncation and sampling for nonresponse follow-up. Truncation refers to stopping all census activities after some portion of nonresponse follow-up has been completed. Sampling could then be used to obtain estimates for the balance of the nonresponse universe, or estimates could be derived from the coverage measurement process.

Testing a combination of truncation and sampling offered no clear advantages over testing sampling alone for the 1995 Census Test. A test of sampling will permit the development of parameters that can be used for future design work without introducing unnecessary control problems into the 1995 Census Test. This decision for the 1995 Census Test does not rule out a future use of truncation for nonresponse follow-up.

Two basic sampling strategies were considered for the 1995 Census Test--sampling of housing units without regard to some geographic clustering, or sampling census blocks and

conducting nonresponse follow-up for all housing units in the selected blocks. The housing unit design offered lower levels of uncertainty, less reliance on models, and potentially a higher degree of acceptability because there would be some sample in almost every block. The block design offered more compatibility with the coverage measurement process, the potential for more cost savings, and the potential for better control of field operations. We need more information to decide between these two options, so we will test and evaluate both of them in the 1995 Census Test.

#### Respondent Friendly Questionnaire Design and Implementation Methods

Our research has focused on ways to increase the willingness and ability of householders to respond to the census by using: (1) questionnaire design and mailing package formats that are much easier for respondents to understand and complete; and (2) notifications for alerting and reminding respondents to complete the forms. Over the last two years, we have experimented with many design and implementation strategies that proved to increase the mail response substantially. Before conducting these tests, Washington State University staff, at the request of the Census Bureau, conducted six focus groups on improving questionnaire design to enhance the public's response to the census. By using these new procedures, we will make the census simpler for respondents, save the cost of enumerator visits to a significant number of nonrespondents, and improve data quality by assuring that a larger number of answers are collected close to Census Day.

In Section IV we discuss the promising results of two experiments to test alternative formats for decennial census questionnaires. To research mail implementation strategies, that is, multiple-contacts with respondents to encourage response, we conducted the Implementation Test (IT). Results from this research indicate that multiple mailings do improve response rates. We also conducted an experiment to investigate how different motivational messages may improve response. In this experiment, the Appeals and Long-Form Experiment (also conducted to assess the effect of applying questionnaire simplification principles to longer forms), we learned that mail response rates for the short form can be dramatically improved by using a mandatory message, "Your Response Is Required By Law," on the outgoing envelope.

#### Automation of Data Collection

We have identified and begun testing improved technologies to speed collection and processing of census data and to give householders greater flexibility in how they can respond so it is simpler for them to respond to the census. Research to measure the public's preference for various response mechanisms has been conducted, and we are assessing publicly available response technologies as well as current and emerging data capture technologies.

#### Using the U.S. Postal Service (USPS) to Identify Vacant and Nonexistent Housing Units

In the census, the misclassification of occupied housing as vacant can cause significant coverage deficiencies. To reduce the misclassification of units, the Census Bureau traditionally conducted at least two checks by different census enumerators to verify the vacancy status. We are working with the USPS to eliminate one of these visits by using information supplied by local letter carriers who cannot deliver a census questionnaire because a housing unit is vacant. Besides eliminating a costly second visit, we believe this activity will yield more accurate data because the initial determination by the letter carrier and subsequent follow-up by a census enumerator to all units classified as vacant are conducted closer to Census Day. This activity is also described in Section VII.

#### Data Capture System for the 2000 Decennial Census (DCS 2000) Using Electronic Imaging

In past censuses, we have used a multiphase data capture system that required photographing census questionnaires, film processing, and computer translation in order to convert written responses to computer-readable form. With the development of DCS 2000, we will be able to convert written responses directly to computer-readable form. This provides major opportunities for streamlining census processing operations. Also, it gives us a means for incorporating Optical Character Recognition--having machines read handwritten numbers and letters--into the processing system. Systems designed using DCS 2000 have the potential to greatly reduce the cost of the 2000 decennial census and improve both data quality and timing.

#### Cooperative Ventures

Over the next several months, we will seek ways to involve state, local, and tribal governments; and other organizations and interest groups in taking the census. A major goal of these initiatives will be to explore the potential of using administrative records and other existing information to reduce cost and improve the quality of the census. Additionally, we are looking at numerous ways to increase USPS involvement in the census. Cooperative efforts with the USPS are described in Section VII.

#### IV. THE SCOPE OF CENSUS CONTENT

The content determination process is used to select the questions to be asked on the decennial census forms, and is a major responsibility of the Census Bureau. The authority for this effort is delegated to the Census Bureau from the Secretary of Commerce, who in turn receives this authority from the Congress (Title 13, United States Code). In addition, under the Paperwork Reduction Act and as part of its role in coordinating statistical efforts across all executive agencies, the Office of Management and Budget (OMB) has major responsibility for this same effort. As in previous decades, the Census Bureau and the OMB will manage this process over the next several years to ensure accurate identification of important Federal data needs. Further, this process will be carried out in conjunction with efforts to make fundamental changes in the role and scope of the decennial census.

There is little debate that the decennial census should collect basic data about the population--those data needed to ensure equity in apportionment and redistricting. Throughout history and throughout the world, censuses have also been used to collect additional information that allows a nation to profile itself and to provide a single, unique source of comparative small area economic and social characteristics of persons and their housing units. A major issue that has arisen in the current quest for fundamental census reform is the effect that collecting these additional data has on the coverage and cost of the census. Extensive analyses of the 1990 decennial census have shown that asking these additional questions has little, if any, effect on the accuracy of the population counts. The additional costs of the questions must be weighed against the value of the information provided by the data, whether they are needed to meet statutory requirements, and the costs of other mechanisms to obtain the data.

##### Content Determination Process

The process to determine content for the decennial census involves soliciting information about data needs, along with justifications, from the Federal and non-Federal sectors. The venues for obtaining content recommendations can range from highly structured, systematic efforts such as advisory committees and local public meetings, to unsolicited letters from individuals or organizations. In reviewing these requests, the greatest weight is given to data needs in response to legislative requirements. In addition to legislative requirements, respondent burden plays an important role in determining the number of questions that appear on decennial census forms. The Census Bureau also screens out questions that are intrusive, offensive, or widely controversial, and questions for which it cannot develop clear, concise wording. After testing and evaluation, the Census Bureau reports its recommendations for census content. The Department of Commerce reports to the Congress twice--on general topics no later than three years before the census date, and on specific questions no later than two years before the census date.

### Active Role of the Secretary of Commerce and OMB

Both the Secretary and OMB play active and important roles in determining census content. As noted above, the Secretary has an important role in determining which content items to include in the census. The Secretary also authorizes advisory committees to help the Census Bureau make decisions about census content and procedures. The OMB uses its role as coordinator of Federal statistical activities to solicit and evaluate Federal agency needs for decennial census data. In its role of enforcing provisions of the Paperwork Reduction Act, the OMB also has authority to review and approve all data collection forms recommended by the Census Bureau. As described in Section I, the Census Bureau is working very closely with the OMB in the 2000 decennial census planning process, particularly for content determination. In addition, we have worked with key stakeholders and the OMB to learn about changing data needs affecting race and ethnicity classification. These efforts will assure appropriate categories for the race and ethnicity question in the 2000 decennial census to more accurately reflect increasing racial and ethnic diversity.

### Data Requirements of Federal Departments and Agencies

The process for content determination among Federal departments and agencies has already begun. The OMB, through its participation in the Policy Committee of the Task Force, formally solicited suggestions for 2000 decennial census topics from all departments and agencies. The OMB provided a structured response format that required detailed justifications, including specific citation of Federal statutes, Executive Orders, or Federal regulations that mandate the need for the data. The Census Bureau is working closely with the OMB and with legal counsel at the Department of Commerce to evaluate these responses. Preliminary results from this evaluation have been used to determine what questions will be included in the 1995 Census Test; final results will inform the Secretary's determination of content for the 2000 decennial census.

### Data Needs of State and Local Governments

The Census Bureau has developed a plan for soliciting data needs from the non-Federal sector, which includes state and local governments as well as businesses and a wide range of nonprofit organizations. Data needs from this sector are typically for detailed social, demographic, economic and housing information for geographic areas such as counties, cities, and census tracts or areas with sparse populations. These are the types of areas for which the decennial census provides a unique source of comparable data derived from uniform collection at the same point in time. Federal statutes and program requirements are often the driving force that generate the need for these data as well. For example, block grants to states often specify use of census data to distribute funds to counties or local governments.

### Reimbursing the Census Bureau for Data Collection

The Census Bureau has collected survey data on a cost reimbursable basis for many decades. In those cases, sponsors for the data collection are well defined and the purpose for which the data are used is relatively narrow in scope. One example of reimbursable data collection is the Current Population Survey that is funded by the Bureau of Labor Statistics. Another example is the Residential Finance Survey, conducted immediately after the decennial census, toward which the Department of Housing and Urban Development made a significant contribution of funds for all phases of data collection and processing. By contrast, there are many Federal departments and agencies that use decennial census data and the purposes for which the data are used are quite diverse. Thus, it is a much more complex task to determine how the Census Bureau might allocate the cost of collecting the data among the Federal agencies. For example, most agencies use data from a relatively small subset of questions on the census form. In many cases, agencies require information from the same question (for example, income). In addition, some relatively small agencies, such as the Equal Employment Opportunity Commission, may have significant data requirements equivalent to those for much larger agencies. These situations raise questions about how we would apportion funding responsibility fairly among the agencies. The issue of reimbursement is made all the more complex by the large number of state and local governments that also use decennial census data but do not reimburse the Census Bureau for data collection. Nevertheless, we believe it is important to pursue this concept. We have already begun to discuss this idea with Federal departments and agencies participating in the Policy Committee and will continue to develop methods of apportioning the cost of the census among our Federal data users.

### Development of a User Friendly Form

The Census Bureau has conducted numerous focus groups on improving questionnaire design and several important tests of alternative formats for decennial census questionnaires. The Simplified Questionnaire Test (SQT) focused on the "short form," which was mailed to most households in the decennial census. This study found higher response rates for households receiving the same number of questions as in 1990 but formatted in a more "user friendly" design than for households receiving the 1990 short form. Extension of this approach to the long (sample) form in the Appeals and Long-Form Experiment (ALFE) also resulted in a higher response rate (over the 1990 format) for one version of the long form that had a more user-friendly layout. We have incorporated the experience gained from these experiments in the 1995 census test design.

### Content for the 1995 Census Test

As noted above, the Secretary of Commerce will submit topics for the 2000 decennial census to Congress in April 1997. Thus, the content determination process will not be completed until well past the 1995 Census Test. Further, single location tests planned for 1995 are not good vehicles for testing new questionnaire topics or wording. Therefore, the choice of

content for the 1995 Census Test is not a formal part of the content determination process for the 2000 decennial census described above.

Based on the efforts to date with OMB and Federal agencies, described above, we plan to include in the 1995 Census Test those topics that are needed to provide data required by law. This would include 17 questions for which a law specifies that the data must come from the decennial census. Of these, six questions would be asked for all households (the "short form"). The remaining 11 questions, and 26 questions for which a law specifies that the data must be collected (and the census has been used as the vehicle to meet this requirement), will be collected only for a sample of households. This proposal would eliminate 11 questions that were included on the 1990 decennial census long form.

(Note that the review of legislative requirements is still underway, so the above conclusions are subject to change.)

#### Alternative Sources to Obtain Data

In addition to researching improvements in more traditional data collection methods, the Census Bureau is investigating the feasibility of alternative data collection methods that could have a profound impact on the way we collect, process, and disseminate information.

##### **o Continuous Measurement**

This research has developed a prototype design for an ongoing "Intercensal Long Form" (ILF) survey, which could replace the traditional "long form" data collected in the census. The survey would use the Census Bureau's Master Address File (MAF) as a sampling frame, and use a combination of a mail questionnaire and follow-up by telephone or personal visit.

The typical ILF small-area estimate would be the average of a characteristic over the three-year period 1999-2001. To contain costs, this estimate would likely be somewhat less precise than the corresponding 1990 long form estimate. The advantage of the ILF is that the estimate then would be updated regularly throughout the decade, using five-year averages.

Besides providing more current data, the ILF would benefit from a permanent field staff and the opportunity for continuous quality improvement. The overall continuous measurement proposal includes an Integrated Estimates Program, using the MAF to link data from the ILF, other household surveys such as the Current Population Survey, and administrative records, into a single statistical system which would be in place by about 2004.

The immediate research issues are the coverage of MAF as a sampling frame, the acceptability of five-year averages and lower precision to users of census sample data,

and the ability to deliver data in a timely fashion. Current plans include a telephone survey to start a prototype continuous measurement program in 1996.

o Matrix Sampling

In a matrix sampling design, questions normally appearing together on the decennial census "long form" would be distributed across two or more sample forms. In this way, most respondents receiving sample forms would be required to answer fewer questions than if they had received the full long form. Thus, the reduction in the number of questions would reduce respondent burden, make the census simpler for respondents, and may increase total response thereby reducing cost. We plan to test a prototype matrix design in the 1995 Census Test to: 1) observe the implications of matrix sampling for delivery and capture of multiple sample forms and 2) observe and evaluate the reaction of respondents to receiving sample forms with varying levels of sample content such as through the observation of differential mail response rates.

o Administrative Records

The Census Bureau is doing extensive research and development on the use of administrative records for coverage measurement and coverage improvement. The use of administrative records for coverage improvement and measurement will be an important component of the 1995 Census Test. While we have determined that conducting a census solely through the use of administrative records is not feasible for 2000, we still hope to continue this important research (subject to funding) for the 2010 census. Also, the Census Bureau's existing intercensal estimation program uses administrative records. We hope to explore how expanded use of administrative records can enhance this program as part of long-range continuous measurement system development.

## V. STATUS OF THE YEAR 2000 DECENTNIAL CENSUS PLANNING EFFORTS

Planning efforts for the 2000 decennial census are on schedule and we are now just over halfway through our research and development programs to design a better census. The hallmark of the research and development program has been an extensive effort to seek out and listen to all those with ideas for change. From many different sources we have heard that the ever-changing society of the United States and the rapidly changing census-taking environment mean that we cannot afford to take the next census as we have taken past censuses. The Department of Commerce and the Census Bureau are committed to considering fundamentally different methodologies and listening to all who can offer informed advice on changes to consider. In addition to advice from the three committees comprising the Task Force, we have sought advice from our professional and minority census advisory committees, the National Academy of Sciences, professional associations, data user groups, other Federal and state agencies, the Congress, and Census Bureau staff.

From February 1991 through November 1991 we held focus groups with stakeholders representing hundreds of organizations to begin exploring new ideas for improving the decennial census. We classified these ideas for fundamental change into major census features, or "building blocks," and defined all the different ways these building blocks could be used.

In January 1992, the Technical Committee of the Task Force took these census building blocks and developed 14 alternative census designs. We then initiated a series of meetings with stakeholders to discuss the designs and to surface relevant research questions. In these meetings, called Alternative Design Assessment Meetings, we talked to over 25 stakeholder groups between February 1992 and June 1992. The technical and policy questions from these groups became the basis for the research and development agenda.

In the March 25, 1993 Federal Register we solicited public comment on the proposed criteria for assessing census design alternatives. We received over 100 sets of comments. On July 20, 1993 the Federal Register reported the final design assessment criteria and explained the changes we made based upon the comments we received. This input was used to prepare the Design Alternative Recommendations report in early 1993. In this widely distributed document we concluded that any specific design, by itself, was not the best we could do because every design had one or more features that had shown promise in our research. Some construed this discarding of all 14 designs as also abandoning all the new ideas to improve the census process. This was not the case. We selected the most promising ideas from each design based on extensive discussion and review by stakeholders.

In August 1993 we used these ideas to prepare the Test Design Recommendation report. This document, containing the proposed goals and methods for use in the 1995 Census Test, was also widely distributed for public review. Based on the many useful and insightful comments we received, we are now preparing the final design plans for the 1995 Census Test. This test, which will be the culmination of the research and development effort,

provides a crucial opportunity to integrate the findings of individual research studies into an overall 2000 decennial census design. We will conduct this test in three urban sites (New Haven, Connecticut; Oakland, California; and Paterson, New Jersey) and one rural site (six parishes in Northwestern Louisiana--Bienville, De Soto, Jackson, Natchitoches, Red River, and Winn). The 1995 Census Test results will, in large measure, form the basis for the final design of the 2000 decennial census, a decision we will make in December 1995.

## VI. PROPOSALS FOR LEGISLATIVE CHANGES NECESSARY TO ADDRESS THE CONCERNS OF CONGRESS

Many fundamental changes to the way we have previously conducted the decennial censuses are under consideration. Some of the proposals for change cannot be implemented unless current legislation is amended. Following are descriptions of legislative initiatives that are either currently under consideration at the Census Bureau or require action outside the Census Bureau. Other legislative changes may be necessary as we move toward a final 2000 decennial census design.

### Use of Sampling

The Census Bureau is considering whether Title 13, United States Code, should be amended regarding the use of sampling for appropriate purposes. The Census Bureau is examining greater use of sampling to support two primary goals: reducing the differential undercount and reducing costs (as described in Sections II and III).

### Give the Secretary of Commerce the Discretion to Share the Census Bureau's Address List When It Is Required for the Efficient and Economical Conduct of Censuses and Surveys

The Supreme Court has ruled that once address list information is collected and recorded by the Census Bureau it is confidential under Section 9 of Title 13, United States Code. Therefore, only sworn census employees currently may see the information.

We are seeking a legislative change that would allow the Census Bureau to share its address lists with Federal, state, and local officials to: 1) improve the accuracy and ensure the completeness of the lists, and thus, of the statistical programs for which they are used; 2) provide meaningful participation by governmental units in the census, thereby improving the completeness and accuracy of the data; and 3) minimize the costs to the taxpayer for the construction of duplicative address lists by various governmental agencies to implement programs of public health, public safety, or other public purposes, in addition to improving the effectiveness of such programs. This legislation is needed primarily to improve the decennial census address list and make the decennial census more accurate and more efficient, and would have the added benefit of helping public health and safety agencies carry out their missions more efficiently. This legislation would also permit the Census Bureau to share its list with the U.S. Postal Service (USPS), to develop and maintain a joint address list, on a nationwide basis. The USPS authority, Title 39, United States Code, would also need to be amended to permit sharing its address list with the Census Bureau.

### Change Census Day

Census Day, which is specified in Section 141 of Title 13, United States Code, has been April 1 since the 1930 census. The National Academy of Sciences Panel to Evaluate Alternative Census Methods has recommended that the Census Bureau examine the efficacy of moving Census Day. Moving Census Day to an earlier date in February or March could offer several advantages.

An earlier Census Day would allow more time before the deadline by which the President must deliver the apportionment counts (currently December 31 of the census year) to implement follow-up activities and an integrated coverage measurement program for a one-number census. An earlier Census Day would also relieve some of the problems encountered enumerating households that move during the census period. Research shows that the peak moving season in the United States begins in mid-May.

An earlier Census Day may also make it easier to enumerate college students, who would be more likely to be in session, and the homeless, who would still be using shelters and services in the colder weather.

### Provide for Exemptions to Encourage Work on the Decennial Census

The decennial census of population and housing poses a unique hiring problem in that it has always required a large number of workers for a relatively short time to staff positions in temporary local field and processing offices. Through efforts to improve mail response rates, and through the proposed use of sampling for nonresponse follow-up, we may be able to significantly reduce these staffing needs. Nevertheless, we expect that under any scenario for the 2000 decennial census, the required number of short-term census workers will be high and the difficulty in filling all positions with qualified candidates will be great.

For the 1990 decennial census, Congress passed legislation to help the Census Bureau hire short-term workers by exempting reemployed Federal civilian and military annuitants involved in the 1990 decennial census from offsets in pay and other benefits. The Census Bureau also arranged for administrative exemptions for various classes of workers.

This legislative initiative, currently undergoing review, would require amending Title 13, United States Code, to provide for similar exemptions for the 2000 decennial census. In addition, it would provide exemptions regarding dual compensation and overtime that would permit current Federal workers to take part-time census jobs in addition to their regular jobs. It also contains other provisions to give the Census Bureau greater flexibility in establishing its own recruitment programs, in keeping with recommendations in the Report of the National Performance Review.

Give the Census Bureau Access to USPS Address Information

To fully implement our plans for a comprehensive and permanently maintained Master Address File linked to the TIGER database, we are relying on address information collected and maintained routinely by the USPS. The USPS has demonstrated a willingness to share this information with us but is prevented from doing so by confidentiality provisions of Title 39, United States Code. The USPS has recommended the enactment of permanent legislation that specifically authorizes it to furnish address information to the Census Bureau and that also provides for the continued confidentiality of the information.

Other Possibilities

- o If we find there are restrictions on accessing critical administrative records, legislation may be requested.
- o Implementation of a continuous measurement system may require changes in legislation. For example, legislation that mandates the use of data normally obtained from the decennial census long form may now have to be broadened to include data from other sources.

**VII. PROGRESS BEING MADE TO PROMOTE COOPERATIVE EFFORTS WITH THE U.S. POSTAL SERVICE (USPS) INCLUDING EFFORTS TO SIMPLIFY AND LOWER COSTS OF THE NEXT DECENTNIAL CENSUS**

Historically, the USPS has made significant contributions in the taking of the decennial census. With the advent of a predominantly mail-out/mail-back census in 1970, census taking has relied heavily on the USPS for the development of the census address list and for the delivery and return of census questionnaires. Acting on guidance from the Congress and others, we are expanding the role of the USPS in the 2000 decennial census.

Over the past year, the Census Bureau and the USPS have made significant progress toward developing a methodology for a cooperative program to create and continuously update a nationwide Master Address File (MAF) linked to the TIGER system (a computer database containing geographic information). Both products are essential to support any 2000 decennial census design. We are nearing the end of the first phase of an address information sharing pilot project, initially involving five 3-digit ZIP Code areas encompassing approximately 900,000 residential addresses.

In the first phase of the pilot project, the Census Bureau and the USPS each performed computer matches between their own address information and that of the other agency. The Census Bureau also matched address information from the USPS to the TIGER data base. Staff from each agency analyzed the results of these activities and met on November 9, 1993 to review the results. Our conclusions include:

- o There are significant benefits to working cooperatively.
- o Neither organization encountered any significant problems in receiving, reading, storing, or manipulating the automated address information provided by the other, and each successfully matched the address information provided by the other. Each learned about more effective ways to perform future matches and is adjusting its software accordingly.
- o In matching the address information from the USPS to the TIGER data base to determine the census geographic code for each address, the Census Bureau achieved a higher match rate than it usually does with addresses from outside sources.
- o The processes performed by the Census Bureau identified more than 3,500 unique street names associated with USPS addresses that did not match street names in the TIGER data base. This supports the fundamental assumption that a cooperative program between the two agencies will provide information needed to help keep the TIGER data base and the MAF up to date.
- o Census Bureau and USPS staff will complete map update activities for selected new streets identified by the automated address match in the first phase sites.

At this same meeting, the USPS and Census Bureau staff agreed that there would be benefit in conducting a second phase to the address information sharing pilot project. The second phase will consist of similar activities for the 1995 Census Test sites. The Census Bureau will request an amendment to the current Memorandum of Understanding for the specific test sites.

Finally, the Census Bureau and the USPS are developing proposed language for changing Titles 13 and 39, United States Code, to permit both agencies to fully share, on a nationwide basis, the address information each maintains.

The Census Bureau and the USPS continue to implement other activities for sharing geographic information:

- o Having provided the USPS with extracts from the TIGER data base equating 1990 census blocks with districts of the 103rd Congress to help the USPS determine the number of mail drops for each district, the Census Bureau will continue providing updated information as several states establish new districts for the 104th Congress.
- o The Census Bureau has provided TIGER/Line files with ZIP+4 Codes to support USPS pilot projects for automated restructuring of carrier routes.
- o Staff from both agencies continue to discuss improved letter carrier and enumerator routing applications that will benefit the activities of both agencies.

In addition to the progress on activities related to sharing address and geographic information, the Census Bureau and the USPS are working on a number of other activities. To guide these efforts, we established a Joint Committee for Census Planning in November 1990. The Joint Committee meets quarterly to explore and develop ways that USPS expertise can improve the census. The Committee's accomplishments over the past year include:

#### Developing a Process for Using Letter Carrier Identification of Vacant Housing

In the census, the misclassification of occupied housing as vacant can cause significant coverage deficiencies. To reduce the misclassification of units, the Census Bureau traditionally conducts at least two checks by census enumerators to verify the vacant status. We are working with the USPS to eliminate one of these visits by using information supplied by local letter carriers when they cannot deliver a census questionnaire because an address is vacant. Besides eliminating a costly second visit, we believe this activity will yield more accurate data because the initial determination by the letter carrier and subsequent follow-up by a census enumerator to all units classified as vacant are conducted closer to Census Day. We are currently working on the detailed planning for testing this operation in the 1995 Census Test.

Relying on USPS Letter Carriers for the Accurate and Timely Delivery of Census Questionnaires

The mail-out/mail-back method of census taking provides the most reliable data and reduces the need for census enumerators to go door-to-door to collect census data; this increases efficiency and dramatically reduces the cost of the census. The Joint Committee is initiating focus groups with local letter carriers to provide specific ideas about the exterior design of the census mailing packages so that letter carriers can recognize them easily and handle them accordingly.

Collaboration on Ways to Encourage Local Efforts to Convert Rural Style Addresses

Many local areas are converting their rural style addresses (Rural Route and Box Number) to house number/street name style addressing because of the advantages in routing of emergency service vehicles (fire, police, and ambulance). Both the Census Bureau and the USPS will benefit from these conversions. We are looking at ways to work together to encourage or facilitate these address conversions and collect information that will link the old rural style addresses to the new house number/street name addresses.

Investigation of Letter Carrier Involvement in Collecting the Census Data

It has been suggested that letter carriers be used to provide census information for households that do not return their completed census questionnaires by mail. A key question is whether this could be accomplished without the letter carrier making direct contact with the households. Our joint finding is that this is not the case; letter carriers are **not** universally knowledgeable about the minimum mandated census information (age, sex, race, Hispanic origin, and household relationships) for all of the persons along their delivery routes. Based on this conclusion, the USPS and the Census Bureau jointly prepared a report that looks at the feasibility of letter carriers conducting the nonresponse follow-up operation through contact with households. Both agencies concluded that there is no methodology for having letter carriers conduct the nonresponse follow-up operation without adding to the overall cost of the census (carriers are paid significantly more than temporary census enumerators), without having an impact on the delivery of the U.S. mail, or without undermining public confidence in the privacy of information entrusted to the postal system.

Using Local Post Offices, Particularly in Rural Areas, to Distribute or Make Available Unaddressed Questionnaires

To support the goal of providing an opportunity for each person to be counted, we are considering multiple locations for distribution of blank census forms. Using post offices as one category of locations would allow people who do not receive a questionnaire or believe they were not included on a census form to pick up census questionnaires, complete them and return them conveniently. We are working on plans for testing this in the 1995 Census Test.

## RESPONSE TO WRITTEN QUESTIONS SUBMITTED BY HARRY A. SCARR

*Question 1. Can you describe in more detail the targeted methods that you plan to test in 1995?*

Answer. We are now in the process of defining the specific targeted methods that will be tested in the 1995 Census Test. Some of the targeted enumeration methods that we are considering include:

1. The development of training modules addressing specific barriers to enumeration.
2. Blitz enumeration, where we send a group of enumerators to complete an assignment area in a short period of time.
3. Increasing the use of procedures in urban areas where we enumerate by personal visit instead of using the mail.
4. The use of local community or neighborhood leaders to assist in the enumeration and the identification of hidden housing units.
5. Use of community-based organizations to provide questionnaire assistance and to help with outreach/promotion.
6. Making unaddressed questionnaires widely available in various languages in targeted areas.
7. Developing outreach messages to address local needs/concerns.

*Question 2. Can you describe in more detail the research you are conducting to improve completion of the household roster on the census questionnaire?*

Answer. There are currently three studies being conducted to explore improved methods for developing the household roster. First, the Living Situation Survey is in the analysis phase and preliminary results are expected this month. The purpose of this study is to learn more about new or changed household composition, mobility, residence patterns, and the attachment of persons to households and other places. The sample is a national, stratified sample of housing units with oversampling of minorities and rental housing units. We conducted face-to-face interviews with about 1000 households and additional interviews with selected individuals in the sample households.

A second study, Cognitive Research, is assessing the meaning of certain key concepts that respondents apply in answering census questions. Long-used census concepts may be difficult to apply where people are highly mobile, connected to multiple households, or tenuously attached to any household. In addition to these complex or ambiguous living situations, culturally specific family and household structures may not match well with current census residence concepts. As a result of these factors, people may misunderstand census concepts and terminology. When such miscommunications occur, people are likely to interpret census questions in ways that are strongly influenced by their own cultural categories and concepts. In order to assess these potential misunderstandings, it is necessary to examine the concepts and categories respondents normally use to understand residence patterns and household membership, and the meanings they attach to the terms and concepts used by the Census Bureau. This study is also in the analysis phase with results expected in April/May.

The third study, the Coverage Test, is to research roster-based ways to reduce both erroneous enumerations and missed persons from mail return households. This test examines the ordering and types of questions that help the respondent to either correctly determine who should be listed at that address, or to accurately list all persons connected to the address and provide information for alternative addresses. This study consists of a national mail-out with a follow-up reinterview of a sample of households. Questionnaire mail-out took place on January 24. Preliminary results are expected in May.

*Question 3. Your report states that there is not universal knowledge among letter carriers about basic demographic characteristics of their customers. (a) What information would letter carriers need to know in order to be helpful to the Census Bureau? (b) Why is universal knowledge of this information needed?*

Answer. The U.S. Postal Service (USPS) letter carriers' knowledge about where people live and receive mail is of tremendous value to the Census Bureau, particularly for address list development and delivery of census questionnaires. However, there are a small number of personal characteristics that are considered mandatory to fulfill the basic purpose of the census. Specifically, we need accurate information about the age, sex, race, Hispanic origin, and household relationship of each person to ensure an accurate census for purposes of apportionment and redistricting and to meet other legislative requirements for census data. In addition, there are about 11 questions (two each on education and income, one each on place of birth, citizenship, year of entry, language, number of rooms, year structure built, and farm residence) that must be included in the decennial census, by law, for a scientific sample

of persons. The joint USPS/Census Bureau report analyzed the idea of letter carriers providing census information for households that do not return their questionnaires. Because of privacy issues and the impact it would have on mail delivery, the USPS opposes having letter carriers make direct contact with households to collect census information. If the letter carriers possessed personal knowledge about each household occupant, direct contact could be avoided.

*Question 4.* When will the Bureau begin to update TIGER and its address lists for the next census? Using what method?

Answer. The TIGER data base is a dynamic file that has been undergoing updates continuously, even after the 1990 census. We have expanded our address range coverage for use in the 1992 Economic Census using information collected in the 1990 Address Control File (ACF) and from place-of-work coding records. We have made many updates from a number of sources and processes. We have inserted the USPS ZIP+4 Codes into the file, edited address ranges, done automated cleanup of feature names, inserted boundaries collected as part of two post-1990 annual Boundary and Annexation Surveys, and inserted feature updates resulting from 73 special censuses and 8 surveys conducted as part of the Census Bureau's Professional Skills Development Program. All these things are in support of the Census Bureau's statistical programs, regular maintenance, or getting ready to begin the process of building a TIGER/Master Address File (MAF) system that will tightly link these two significant Census Bureau files. The TIGER/MAF updating process, slated to begin this month, will be used first in support of the 1995 Census Test. We plan to begin making updates for the balance of the country using a similar process beginning later this year.

The Census Bureau has reached a temporary agreement with the USPS to use the address information contained in its Delivery Sequence File (DSF), a file of all addresses to which the USPS delivers mail, for the 1995 Census Test sites. The Census Bureau is working on a longer term solution that requires legislative changes so that we can gain access to the complete DSF for the TIGER/MAF updating process. With access to the DSF, we will match that file to the 1990 ACF and then locate all mismatches, including new addresses that need to be added to enhance MAF coverage. After the initial match of the DSF with the 1990 ACF, the result is an MAF in which each address is geocoded. This also will result in adding new information, in the form of additional feature name and address range information, to the TIGER data base. After an initial creation, the MAF and TIGER will be updated periodically using the DSF, local government records, and a variety of other administrative records sources.

*Question 5.* When will the Bureau begin development of an automated matching system? Will that system be in place to support the 1995 census test?

Answer. The Census Bureau has developed all of the components of an automated matching system. We have been doing automated matching to evaluate the type of administrative records and also to develop the Master Address File. During the 1995 Census Test, we will evaluate components of an automated matching and unduplication system. These components include an address standardizer, name standardizer, string comparator, automated geocoder, person matching algorithm, and an address matching algorithm. We are confident that in the 1995 Census Test we will identify the best way to accomplish matching so as to design a system for the 2000 census.

*Question 6.* When will the Census Bureau and Postal Service be prepared to recommend legislation concerning the sharing of their address lists?

Answer. The Census Bureau has developed proposed language for changing Title 13, United States Code, to permit sharing of address information with Federal, state, and local governments. This legislation is needed primarily to improve the decennial census address list and make the decennial census more accurate and more efficient and would have the added benefit of helping public health and safety agencies carry out their missions more efficiently. This legislation would also permit the Census Bureau to share its address list with the USPS to develop and maintain a joint address list on a nationwide basis. The proposed language is now being reviewed by the Census Bureau.

The USPS is also prepared to propose language for changing Title 39, United States Code, to permit the sharing and address information with the Census Bureau. The precise language of the USPS' proposal must depend on what changes are made in the confidentiality provisions of Title 13. Once the Census Bureau's recommendation has been determined, the USPS expects to be in a position to make its own recommendation in a timely fashion with respect to Title 39.

*Question 7.* When will the Bureau have a cost estimate for the 2000 census?

Answer. We will develop a cost estimate for the 2000 census after we evaluate the 1995 Census Test and select the design of the 2000 census.

*Question 8a.* By what criteria will you evaluate and compare matrix sampling, continuous measurement, and other intercensal data collection methods?

Answer. The Census Bureau is examining the potential benefits of matrix sampling and continuous measurement. Other intercensal data collection methods, such as administrative records and expansion of current demographic surveys, are part of developing long-term efficiencies.

Ultimately, we will have to decide among three basic approaches to conducting data collection in the 2000 census: 1) a "traditional" approach using a short form and a single long form, 2) a modified traditional approach using a short form and multiple long forms (matrix sampling), and 3) a short-form only census with long-form data being collected throughout the decade (continuous measurement). Overall, the most important criterion will be to what extent each of these approaches meets the Nation's data needs within the context of: #1) reducing the overall undercount and the differential undercount and 2) containing the cost of enumeration and data collection.

We are reviewing completion of the first stage of evaluating the degree to which Federal agencies data needs are mandated by law. We will subsequently conduct a determination of non-Federal data needs. Having determined data needs, we must assess whether matrix sampling and continuous measurement will be able to meet these needs in a most cost-effective manner.

We have shown that inclusion of sample content in the census has little, if any, negative impact on our ability to count the population. Still, we must make sure that none of the alternatives chosen unnecessarily complicates or prolongs the effort to enumerate the population, and weigh the costs. Data from the 1995 Census Test will provide key information for examining the cost implications of matrix sampling. Continuing research on continuous measurement and preliminary tests of the methodology will allow us to complete an evaluation of its potential costs and operational feasibility. We will conduct the continuous measurement evaluation in phases. Availability of results will begin in mid-1995; all results will be available by late 1996 to allow full comparisons of continuous measurement and matrix sampling.

*Question 8b.* When will the Bureau choose between these methods?

Answer. We will make a final determination about the 2000 census design by December 1995. This will include a decision about whether or not to utilize matrix sampling for the collection of sample data, depending upon its cost effectiveness, operational feasibility, and ability to meet data needs. This will not preclude the possible use of a continuous measurement system to subsequently replace the collection of sample data during the census year.

*Question 9.* The Census Bureau took advantage of five different exemptions for hiring temporary employees in 1990. They were: waiving competitive civil service hiring rules, federal and military retirees, AFDC recipients, food stamp recipients, public housing recipients. (a) What evaluations have you done to demonstrate whether those exemptions were useful in 1990? (b) What are the results of your evaluations of the geographic wage scale?

Answer. The exemptions program was a key and successful component in the recruitment process by providing approximately one-fifth of the 552,525 temporary census employees hired to complete the 1990 Decennial Census of Population and Housing. We know from the experiences of our census managers that the hiring exemptions were valuable to the Census Bureau's success in achieving hiring objectives. These exemptions appear to be a highly effective means of mobilizing a large temporary work force to fulfill a national objective. We have prepared a report on these efforts and will be glad to make it available to you.

Differential pay rates were also a key factor in the 1990 recruitment program. These rates helped the Census Bureau identify over two million potential job candidates for the 1990 census, over four times the number obtained for the 1980 census. The Census Bureau conducted a sample survey of nonresponse follow-up enumerators as part of the 1990 census evaluation of variable pay. The objectives of this survey included investigating enumerators' attitudes toward the census pay rate and the effects of the pay rates on the enumerators' employment decision.

Overall the results of the survey indicate that the enumerators had a positive attitude about the adequacy and comparability of the census pay rates. For instance, the survey indicates that 89 percent of the enumerators responded that the census pay rate was vital in their decision to seek employment with the Census Bureau. When asked if they would have applied for a job with the Census Bureau at pay rates ranging from \$5.00 to \$8.00 per hour, the number of enumerators who would definitely or probably apply for employment increased as the pay rate increased. Of the sampled enumerators, 56 percent agreed that the hourly pay rate was adequate for the type of work required, about 40 percent agreed to the comparability of census pay with rates for similar nongovernment jobs in their local area, and about 55

percent agreed that their basic pay was an incentive to remain and complete census work.

*Question 10.* What effect will changing census day have on where migrant farm-workers are found and counted?

Answer. At this point we do not have enough information to make an accurate assessment of the effect of changing Census Day on the enumeration of migrant farm workers. Last fall we sponsored ethnographic research to look at, among other things, migration patterns of migrant farm workers. This included an exploration of points of origin, travel routes, and stopping sites along the principal migration streams and work areas, schedules of departures from home base, and travel to and from work areas. Based on this research and further investigations it may suggest, we expect to improve our ability to count migrant farmers regardless of the change to Census Day.

Mr. SAWYER. Thank you very much.

Rather than go directly to questions, we will go to Mr. Hunt.

Mr. HUNT. Thank you, Mr. Chairman. I will summarize my statement and ask that the full text be entered into the record.

Mr. SAWYER. Without objection.

Mr. HUNT. I am pleased to be here to comment on the plans of the Bureau of the Census with the 2000 Decennial Census. You asked for our perspective on the issues discussed in the Bureau's report to Congress, the status of cooperative efforts between the Bureau and the U.S. Postal Service, and the effects of fiscal year 1994 funding levels on the Bureau's 2000 Decennial Census program.

Over the last year, we have chronicled the Bureau's progress making fundamental changes that might achieve the overarching goals of containing costs and improving accuracy for the 2000 census. In our testimony in October 1993, we said that although the Bureau had made promising proposals, fundamental reform was still at risk.

Today, while the Bureau has continued to make some progress since October, our overall assessment remains essentially the same. We are still concerned about the long-term prospects for reform, given the overall pace of the Bureau's progress to date and the significant challenges that remain.

While we are encouraged by the Bureau's recent focus on testing specific proposals to modify the census methodology, we believe that the Bureau must aggressively plan for and carefully implement its research, testing and evaluation programs. Results of those efforts must be available to make fully informed and timely decisions and to build needed consensus among key stakeholders and customers for changes in the 2000 census.

The perspectives I offer today are based on the draft report to Congress which was awaiting approval by the Secretary of Commerce when we completed this statement. I might also add, Mr. Chairman, that statement was signed and delivered to the committee about midday yesterday.

In its draft report, the Bureau summarizes its planned efforts to improve the decennial census. Today, I will summarize my testimony on those proposed changes that we believe, based on our prior work and analysis, offer the greatest potential to contain costs and improve accuracy.

These changes are: One, the development of a more user-friendly, streamlined census questionnaire and the use of more frequent mail contacts; two, the development of ways to sample

nonrespondents; three, the development of a "one-number census" that combines the results of a traditional head count, supplemented by administrative records and statistical estimating procedures; and four, the development of ways to rely more on the Postal Service to improve the Bureau's address list and a geographic system.

The Bureau currently plans to have user-friendly questionnaires distributed through a multiple contact implementation strategy for both the 1995 test and the 2000 Decennial Census. These changes we have long supported.

We also are encouraged that the Bureau is streamlining the 1995 test questionnaire by reducing the content. The Bureau indicates in its report that its decisions on the content for the 1995 test do not represent final decisions on the content for the 2000 census. No consensus yet exists on what questions to include in the 2000 census.

The Bureau, with the assistance of others in the executive branch, is continuing its review, begun in December of 1992, of Federal agency needs for each question on the census questionnaire. The Bureau says in its report that the determination of 2000 census content will continue well past the 1995 test. The Secretary of Commerce is required to report to Congress on the contents of the 2000 Decennial Census in April, 1997.

We are concerned about this timing. In our 1992 transition report on the Department of Commerce, we said that an early Bureau recommendation on census content is required for political consensus and operational reasons.

To reduce costs, the Bureau also is considering sampling households that do not mail back questionnaires instead of attempting to contact each nonresponding household for a personal visit by a census enumerator. We have long favored testing this procedure as a way to reduce costly field work and enhance data quality.

Sampling nonrespondents in the 1995 test will require careful operational planning. The Bureau also needs to prepare and present information as soon as possible comparing the possible error differential between sampling nonrespondents and the traditional methods used in 1990 for counting all nonrespondents. The results of this analysis need to be explained and clearly communicated. With this information the users of census data can compare the range the potential errors in the data from the two methods.

The Bureau is considering whether section 195 of title 13 of the United States Code should be amended to permit sampling nonrespondents. We have not done a legal analysis of this issue and we take no position on what section 195 requires or prohibits. As we have said, in our report on the recommendations of the Vice President's Initial Performance Review, because of its critical nature to census planning and the need for operational testing, any possible legal issues concerning sampling should be resolved as expeditiously as possible.

The Bureau's "one-number census" would integrate a head count and statistical estimation procedures to produce a single and best possible set of numbers by the legal deadlines. The Bureau has recently conceived of a new method for integrating estimations in the census. It is a hybrid that combines some of the concepts of the

previously considered methods. It resembles the basic approach of the postenumeration survey, or PES, used in the 1990 census.

The Bureau faces significant challenges in developing its proposal to integrate estimating procedures into the census itself to improve coverage. To overcome the problems of completing the PES in time to meet the statutory deadlines, the Bureau is proposing to change and accelerate the coverage estimation process with its hybrid proposal.

The proposal changes, however, present another set of problems. The Bureau needs to evaluate the effects of this new method for estimating coverage. The Bureau also is considering using administrative records as part of the proposed "one-number census" methodology. Using administrative records, however, poses a number of operational and statistical problems that must be addressed in the 1995 test.

The Bureau and the Postal Service have made some progress in their cooperative efforts to improve the decennial census. In our October 1993 testimony, we expressed concern that the Bureau's efforts with the Postal Service to improve the address list were lagging. We noted that without aggressive action, the Bureau may lose opportunities to test initiatives in 1995.

Since then, the Bureau and the Postal Service have been exploring ways to improve the coverage and reduce the cost of the census. In my written testimony, I discuss three areas of this cooperative effort in more detail. They are: One, address list development; two, geographic work; and three, the identification of vacant housing units.

For those new procedures that prove successful in the 1995 test, the Bureau and the Postal Service must begin planning for implementing them on a nationwide basis. Due to the size of the decennial census and regular Postal Service operations, these joint efforts pose enormous logically challenges.

The 1995 test will be crucial for the Bureau to achieve fundamental breakthroughs in the 2000 census. Last October, we noted that sufficient funds might not be available in fiscal year 1994 to plan and prepare for this test. Since that time, however, the Bureau has indicated it believes it can augment fiscal year 1994 appropriations provided by Congress with recoveries of prior year's obligations and it is cautiously optimistic that funds are sufficient to provide for all important census planning activities in fiscal year 1994. However, the availability of fiscal year 1995 funds for carrying out the large-scale census tests now being planned for four locations is not yet known.

Any changes to the decennial census—which is the cornerstone of the Federal statistical system—will naturally reverberate throughout the Federal Government and the broader public and private statistical community. Continuing top-level leadership, particularly at the Census Bureau, the Department of Commerce, and OMB is critical to generate needed consensus on the direction of change and the implications of census reform for Federal and other data needs.

For example, despite the very capable efforts of the current Acting Director, as long as the Bureau Director position remains vacant, the Census Bureau will be without a fully vested and fully

authoritative voice. The Bureau Director plays a central role both internally and externally in brokering agreements among stakeholders, fostering relationships of shared responsibility for the census with the Postal Service and other organizations, and leading discussions with Congress, the Department of Commerce, the Department of Justice, and OMB on any legislative initiatives related to the decennial census.

Mr. Chairman, this concludes my prepared statement. Jack and I will be happy to answer any questions that you may have.

[The prepared statement of Mr. Hunt follows:]

PREPARED STATEMENT OF WILLIAM M. HUNT, DIRECTOR, FEDERAL MANAGEMENT ISSUES, GENERAL GOVERNMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE

Over the last year, GAO has chronicled the Bureau's progress toward making fundamental changes to the decennial census methodology that might achieve the overarching goals of containing costs and improving accuracy for the 2000 Census. In GAO's testimony in October 1993 said that although the Bureau had made promising proposals, fundamental reform was still at risk. Today, while the Bureau has continued to make some progress since October, GAO's overall assessment remains essentially the same.

GAO is still concerned about the long-term prospects for reform, given the overall pace of the Bureau's progress to date and the significant challenges that remain. While GAO is encouraged by the Bureau's recent focus on testing specific proposals to modify the census methodology, GAO believes that the Bureau must aggressively plan for the carefully implement its research, testing, and evaluation programs. Results of those efforts must be available to make fully informed and timely decisions and to build needed consensus among key stakeholders and customers for changes in the 2000 Census.

Any changes to the decennial census—which is the cornerstone of the federal statistical system—will naturally reverberate throughout the federal government and the broader public and private statistical community. Continuing top level leadership particularly at the Census Bureau, the Department of Commerce, and OMB is critical to generate needed consensus on the direction of change and the implications of census reform for federal and other data needs. For example, despite the capable efforts of the current Acting Director, as long as the Bureau Director position remains vacant, the Census Bureau will be without a fully vested and authoritative voice. The Bureau Director plays a central role both internally and externally in brokering agreements among stakeholders, fostering relationships of shared responsibility for the census with the Postal Service and other organizations, and leading discussions with Congress, the Department of Commerce, the Department of Justice, and OMB on any legislative initiatives related to the decennial census.

Mr. Chairman, Mr. Petri, and Members of the Subcommittee: I am pleased to be here today to comment on the plans of the Bureau of the Census for the 2000 Decennial Census. You asked for our perspective on the issues discussed in the Bureau's report to Congress, which was required by the conference report accompanying the fiscal year 1994 appropriations bill. You also asked for our comments on the status of cooperative efforts between the Bureau and the U.S. Postal Service and on the effects of fiscal year 1994 funding levels on the Bureau's planning and research program for the 2000 Decennial Census. My testimony is based on our continuing audit work, at the Subcommittee's request, to monitor and evaluate planning activities and operations for the 2000 Decennial Census.

Over the last year, we have chronicled the Bureau's progress toward making fundamental changes to the decennial census methodology that might achieve the overarching goals of containing costs and improving accuracy for the 2000 Census.<sup>1</sup> In our testimony in October 1993, we said that although the Bureau had made promising proposals, fundamental reform was still at risk. Today, while the Bureau has continued to make some progress since October, our overall assessment remains essentially the same. We are still concerned about the long-term prospects for reform, given the overall pace of the Bureau's progress to date and the significant challenges that remain. While we are encouraged by the Bureau's recent focus on

<sup>1</sup> See *Decennial Census: Fundamental Reform Jeopardized by Lack of Progress* (GAO/T-GGD-93-6, Mar. 2, 1993); *Decennial Census: Focused Action Needed Soon to Achieve Fundamental Breakthroughs* (GAO/T-GGD-93-32, May 27, 1993); and *Decennial Census: Test Design Proposals Are Promising, but Fundamental Reform Is Still at Risk* (GAO/T-GGD-94-12, Oct. 7, 1993).

testing specific proposals to modify the census methodology, we believe that the Bureau must aggressively plan for and carefully implement its research, testing, and evaluation programs. Results of those efforts must be available to make fully informed and timely decisions and to build needed consensus among key stakeholders and customers for changes in the 2000 Census.

#### GAO PERSPECTIVE ON THE BUREAU'S REPORT TO CONGRESS

At the time we were completing our audit work to prepare for this hearing, the Bureau's report to Congress due January 1, 1994 had not been officially approved. The perspectives we offer today are based on a draft report, which was awaiting approval by the Secretary of Commerce, when we completed this statement.

In its draft report to Congress, the Bureau summarizes its planned efforts to improve the decennial census. The report lists and summarizes the status of what the Bureau refers to as 14 proposed fundamental changes from the 1990 Census. Today, we will focus on those proposed changes that we believe, based on our prior work and analysis, offer the greatest potential to contain costs and improve accuracy. These changes are: (1) the development of a more user-friendly, streamlined census questionnaire and the use of more frequent mail contacts; (2) the development of ways to sample nonrespondents; (3) the development of a "one-number census" that combines the results of the traditional head count supplemented by administrative records and statistical estimating procedures to produce a single, best possible set of numbers by the legal deadlines; and (4) the development of ways to rely more on the Postal Service to improve the Bureau's address list and geographic system.

#### STATUS OF EFFORTS TO DEVELOP A USER-FRIENDLY AND STREAMLINED QUESTIONNAIRE

The Bureau currently plans to have user-friendly questionnaires distributed through a multiple contact implementation strategy for both the 1995 test and the 2000 Decennial Census—changes we have long supported. The Bureau has issued a contract to evaluate current and emerging technologies that could support these changes and to help determine the obstacles that must be overcome for multiple mail contacts to over 100 million households. We also are encouraged that the Bureau is streamlining the 1995 test questionnaire by reducing the content. The 1995 test census will have six questions on the short form—a reduction of five questions from the 1990 census short form. The Bureau also plans to ask 37 additional questions of a sample of the population (a reduction of 11 questions from the 1990 Census long form). For the sample questions on the long form the Bureau plans to use a matrix sampling design. Those chosen to be in the sample would receive different versions of the long form, each with a different set of questions, but no one household would be asked all 37 sample questions. We have noted in previous testimony that this matrix sample design presents difficult operational and processing problems.

The Bureau indicates in its report that its decisions on the content for the 1995 test do not represent final decisions on the content of the 2000 Census. No consensus yet exists on what questions to include in the 2000 Census. The Bureau, with the assistance of others in the executive branch, is continuing its review, begun in December of 1992, of federal agency needs for each question on the census questionnaire. The Bureau says in its report that determination of 2000 Census content will continue well past the 1995 test. The Secretary of Commerce is required to report to Congress on the contents of the 2000 Decennial Census in April 1997. We are concerned about this timing. In our transition report on the Department of Commerce, we said that an early Bureau recommendation on census content is required for political consensus and operational reasons.

#### STATUS OF EFFORTS TO SAMPLE NONRESPONDENTS

To reduce costs, the Bureau is considering sampling households that do not mail back questionnaires instead of attempting to contact each nonresponding household through a personal visit by a census enumerator. We have long favored testing this procedure as a possible way to reduce costly fieldwork and enhance total data quality. Sampling nonrespondents in the 1995 test will require careful operational planning. Sampling nonrespondents has to be integrated operationally with whatever estimation techniques are used in the Bureau's "one-number census" proposal. The Bureau currently plans to use a 30-percent sampling rate in its 1995 test. At that rate, the Bureau estimated it could have saved as much as \$457 million in the 1990 Census.

The Bureau also needs to prepare and present information as soon as possible comparing the possible error differential between sampling nonrespondents and the

traditional methods used in 1990 for contacting all nonrespondents. Sampling error is introduced, particularly at the smaller geographic levels of blocks and census tracts, by sampling nonrespondents. But the sampling error may be offset by the elimination of other types of error caused by attempts to follow up all nonrespondents in the 1990 Census. This tradeoff can be analyzed closely on the basis of 1990 Census data.<sup>2</sup> The results of this analysis need to be explained and clearly communicated. With this information the users of census data can compare the range of potential errors in the data from the two methods.

The Bureau is considering whether section 195 of Title 13 of the U.S. Code should be amended to permit sampling nonrespondents. We have not done a legal analysis of this issue, and we take no position on what section 195 requires or prohibits. We note that several federal district court decisions have found that statistical adjustments of the census counts can be completed under existing law.<sup>3</sup> However, sampling nonrespondents has not yet been addressed by the courts because this technique has never been used in a decennial census. As we said in our report on the recommendations of the National Performance Review, because of its critical nature to census planning and the need for operational testing, any possible legal issues concerning sampling should be resolved as expeditiously as possible.<sup>4</sup>

#### STATUS OF BUREAU PROPOSAL FOR A "ONE-NUMBER CENSUS"

The Bureau faces significant challenges in developing its proposal to integrate estimation procedures into the census to improve coverage. The Bureau's "one-number census" would integrate a headcount and statistical estimation procedures to produce a single and best possible set of numbers by the legal deadlines. Those deadlines are December 31 of the census year for state population numbers for re-apportionment purposes and April 1 of the following year for basic population data used for redistricting purposes. Last October, we testified that the possible design for integrated measurement was in a state of flux. Since that time, the Bureau has conceived of a new method for integrating estimation procedures into the census. The Bureau's proposal is a hybrid that combines some of the concepts of the previously considered methods. It resembles the basic approach of the post enumeration survey (PES) used in the 1990 census; this survey matched the results of a reinterview of a sample of the population to the original enumeration and statistically estimated the true population based on this information. We agreed last October with the recommendation of the National Academy of Sciences Panel to Evaluate Alternative Census Methods that the Bureau should continue research efforts to perfect the PES.

We support the Bureau's intent to test and evaluate the hybrid method in 1995 as a possible way to perfect the PES. To overcome the difficult problems of completing the PES in time to meet the statutory deadlines and to minimize data quality problems, the Bureau is proposing to change and accelerate the coverage estimation process with its hybrid proposal. The proposed changes, however, present another set of problems. For example, to expedite the sample survey upon which the coverage estimates are based, the survey will occur at the same time that some of the initial nonresponse interviewing is still underway. The Bureau needs to evaluate whether this timing complicates Bureau field procedures and possibly contaminates the data.

The Bureau is considering using administrative records as part of the proposed "one-number census" methodology because they have the potential of identifying those persons who are not identified in either the initial interview or the sample survey. Using administrative records, however, poses a number of operational and statistical problems that must be addressed in the 1995 test. A key issue is the degree of evidence needed by the Bureau before it can conclude that a person found in an administrative record should be enumerated as living at a certain residence on Census Day. Bureau tests on using administrative records as part of special censuses in 1993 met with mixed results and appear to have limited value in solving the problems of using administrative records as part of a "one-number census."

<sup>2</sup>See *Planning the Decennial Census: Interim Report*, Panel on Census Requirements in the Year 2000 and Beyond, Committee on National Statistics, Commission on Behavioral and Social Sciences and Education, National Research Council. (National Academy Press: Washington, D.C. 1993) pp. 17-18.

<sup>3</sup>*Carey v. Klutznick*, 508 F. Supp 404 (S.D.N.Y. 1980); *Young v. Klutznick*, 497 F. Supp. 1318 (E.D. Mich. 1980); *City of New York v. U.S. Dept. of Commerce*, 739 F. Supp. 761, 767 (E.D.N.Y. 1990).

<sup>4</sup>*Management Reform: GAO's Comments on the National Performance Review's Recommendations* (GAO/OCG-94-1, Dec. 3, 1993).

## STATUS OF COOPERATIVE EFFORTS WITH THE U.S. POSTAL SERVICE

The Bureau and the Postal Service have made some progress in their cooperative efforts to improve the decennial census. In our October 1993 testimony, we expressed concern that the Bureau's efforts with the Postal Service to improve the address list were lagging. We noted that without aggressive action the Bureau may lose opportunities to test initiatives in 1995. Since then, the Bureau and the Postal Service have been exploring ways to improve the coverage and reduce the cost of the census. I will discuss three areas of this cooperative effort: (1) address list development, (2) geographic work, and (3) the identification of vacant housing units.<sup>5</sup> For those new procedures that prove successful in the 1995 test, the Bureau and the Postal Service must begin planning for implementing them on a nationwide scale. Due to the size of the decennial census and regular Postal Service operations, these joint efforts pose enormous logistical challenges.

## COOPERATIVE ADDRESS LIST DEVELOPMENT EFFORTS

The first phase of a pilot study on sharing address information between the Postal Service and the Bureau has been completed. Despite some technical problems and the need for further analysis, the Bureau is encouraged that using the Postal Service's automated address system offers the potential to update its own address list. The Bureau and the Postal Service believe that statutory barriers prevent a full cooperative sharing of address information. They are developing proposed language for changing their respective authorizing statutes governing the sharing of address information on a nationwide basis. We have not had sufficient time to evaluate the need for such legislative changes.

## COOPERATIVE GEOGRAPHIC WORK

The Bureau must be able to locate precisely and map the new addresses provided by the Postal Service. Procedures to do this are in an early stage of development. The first step of the effort—incorporating the addresses into the Bureau's automated geographic data base—has just begun, so the effectiveness of this procedure cannot yet be determined. The Bureau must update both its address list and its geographic database to support any census design.<sup>6</sup> We are concerned that plans for such updates are not more developed. If the Bureau in cooperation with the Postal Service does not develop a systematic way to update the Bureau's automated geographic database, the Bureau will have to revert to relying on numerous local governments. Such a reliance would complicate the process.

## COOPERATIVE EFFORTS TO IDENTIFY VACANT HOUSING UNITS

The Bureau has concluded that it may be able to use Postal Service letter carriers to identify vacant housing units, an idea which we have favored in past reports and testimony. In the 1990 Census, about 39 percent of the 34.3 million housing units that required personal visits were either vacant or nonexistent. In its 1995 test, the Bureau plans to eliminate one of the two follow-up visits to units thought to be vacant or nonexistent. The Bureau plans to use information supplied by letter carriers when they cannot deliver a census questionnaire because a housing unit is vacant or does not exist. The Bureau believes that this change would have saved as much as \$165 million in the 1990 Census. It also believes that the data obtained from the Postal Service should be more accurate. The Bureau and the Postal Service should be more accurate. The Bureau and the Postal Service need to analyze how to synchronize this operation with the regular operations of the Postal Service, and they need to develop plans to evaluate this procedure in the 1995 test.

## BUREAU IS CAUTIOUSLY OPTIMISTIC THAT IMPORTANT CENSUS ACTIVITIES SUFFICIENTLY FUNDED IN FISCAL YEAR 1994

The 1995 test will be crucial for the Bureau to achieve needed fundamental breakthroughs in the 2000 Decennial Census. Last October we noted that sufficient funds might not be available in fiscal year 1994 appropriations provided by Congress with additional recoveries of prior years' obligations, and it is cautiously optimistic that funds are sufficient to provide for all important census planning activities in fiscal

<sup>5</sup> Additional work is ongoing in other areas, such as delivery and return of census questionnaires and strategies for rural areas.

<sup>6</sup> These updates are crucial elements of the Bureau's proposed continuous measurement concept.

year 1994. However, the availability of fiscal year 1995 funds for carrying out the large scale census test now being planned for four locations is not yet known.

#### PROVIDING THE LEADERSHIP NEEDED FOR SUCCESS

Any changes to the decennial census—which is the cornerstone of the federal statistical system—will naturally reverberate throughout the federal government and the broader public and private statistical community. Continuing top level leadership particularly at the Census Bureau, the Department of Commerce, and OMB is critical to generate needed consensus on the direction of change and the implications of census reform for federal and other data needs.

For example, despite the capable efforts of the current Acting Director, as long as the Bureau Director position remains vacant, the Census Bureau will be without a fully vested and authoritative voice. The Bureau Director plays a central role both internally and externally in brokering agreements among stakeholders, fostering relationships of shared responsibility for the census with the Postal Service and other organizations, and leading discussions with Congress, the Department of Commerce, the Department of Justice, and OMB on any legislative initiatives related to the decennial census.

This concludes my prepared statement, Mr. Chairman. My colleagues and I would be happy to answer any questions.

Mr. SAWYER. Gentlemen, thank you both.

I want to note for the record the presence of our colleague, Mr. Wynn, and offer congratulations on his recent change in marital status. You put the district work period to good use and gave it a whole new definition.

Mr. WYNN. Thank you, Mr. Chairman.

Mr. SAWYER. Let me ask you a question that occurs to me as part of what you both said earlier.

Dr. Scarr, you mentioned a new uncertainty that might be introduced into the counts as a result of the use of estimation methods. Let me just, for the sake of discussion, when you say a "new uncertainty," do you mean a new and additional uncertainty, or a different—

Mr. SCARR. Different, nothing new. It is nothing different from what we have testified before and what we have discussed before in terms of the inevitable problem with small area data when you sample it.

Mr. SAWYER. Would it be fair to suggest that while this was a "different uncertainty" that it might be a more measurable uncertainty as opposed to the previously less well-known uncertainty?

Mr. SCARR. I think the confusion is that the uncertainty that we are talking about is the uncertainty we have been talking about for some time with respect to these measures. It is really nothing new. It would be as unamenable to measurement as it always has been.

It was an unfortunate choice of words. It just reiterates the problem of uncertainty at increasing levels of disaggregation when we use sampling.

Mr. SAWYER. On that same count, Mr. Hunt, you suggested at one point that the proposal to accelerate coverage estimates presents another set of problems; this is not anything that is related to that kind of uncertainty? Or is it?

Mr. HUNT. Mr. Kaufman might be able to take that.

Mr. KAUFMAN. When we looked at the recent plan for integrated coverage measurement, we found some complicating processes or complicating activities which could make great problems for the Bureau. For example, in the 1990 PES, all field work was basically completed before the Bureau attempted to do the PES interview.

In an attempt to accelerate this particular activity for 2000, they are going to expedite this, and this may have a tendency to confound or contaminate the data. That is one of the risks they take.

Also, to accelerate the operation, they are having the—I will call it PES enumerators, actually do some of the matching as well as the reconciliation on a very timely basis. Now this may introduce some bias from that particular enumerator because he has already done his own interview. On another basis, the householder who responded may go on the defensive after having just responded to questions and then being confronted that his or her original answers may differ.

These are complicating factors that the Bureau will have to contend with. We understand their motive, but this is the type of thing that we are talking about in our testimony.

Mr. SAWYER. It would be fair to say a substantial component of those complicating factors is a result of the logistical difficulties of administrative overlap, overlap in execution of tasks at the same time?

Mr. HUNT. Right.

Mr. SAWYER. Dr. Scarr?

Mr. SCARR. One thing, you know, Mr. Chairman, we have an initiative to move the census date and make it earlier, precisely the kinds of things that Jack is talking about is one of the reasons that we want to do that. We want to be able to ensure that we will, indeed, have the official number by the legally mandated deadlines. That does not address directly the nature of the complications but it certainly does indicate that we are cognizant of that and we want to allow sufficient time for the eventualities that may come up. That is one of the driving forces behind that.

Mr. SAWYER. In the whole range of issues that surround sampling for nonresponse follow-up and integrated coverage measurement, does this mean you won't be giving the emphasis to coverage improvement that we saw in 1990?

Mr. SCARR. Not at all, Mr. Chairman. As you noted in my oral remarks and in the Secretary's report, the research on barriers to enumeration and research on all aspects of coverage continue because none of this will work unless the coverage is as adequate as it was in 1990. One of the exercises is to basically not have to do more, but just to concentrate on the stuff that you can't get with decent coverage efforts.

Mr. SAWYER. Do you plan to test that in 1995?

Mr. SCARR. Yes.

Mr. HUNT. I would just make one point about the coverage improvement efforts in 1990. We need to keep in mind that coverage improvement evaluations estimated that about 1 percent of the population in the total census was added through the coverage improvement efforts, and they extended throughout most of 1990. These efforts started in May or June. When you look at the data, the really interesting thing about the data, is that you are in the field for a very long time and the costs are rather substantial.

And when you compare those costs to the quality of the data that you are receiving, we find that early on the error rate is something less than 5 percent, but each month, June, July, and August, all the way through the fall. It goes up at each interval and ends up

at the end to be about a 30 percent error rate in August through December. So you are spending a lot of time in the field and spending a lot of money getting a lot of data problems. For example, in the parolee/probationer exercise, I think the estimate there was that of the 400,000 people who were added to the count, approximately 50 percent of those folks were in error. We need to keep that in mind as we are thinking about these changes, the more you are in the field, the more it is going to cost, and it has been shown that the data quality goes down.

Mr. SAWYER. That really does cost money and accuracy, and presumably those last increments of the count are very, very expensive.

Let me ask you, do we have a sense yet of how much we think 2000 is going to cost?

I see the little smile playing on the corner of your mouth. Or how much, in any terms that you care to use, the programs that you plan to test in 1995, will contribute to savings over what a replication of 1990 might have cost.

Mr. SCARR. Mr. Chairman, as you know, the only number that is floating around in terms of cost is an estimate of \$4.8 billion, which may be taking the equivalent of the 1990 Census, which we are unlikely to do. I think we have considerable evidence before the 1995 test that the user-friendly questionnaire holds tremendous promise for increasing the original response rate, which, of course, cuts down cost. Because every percentage point that you get above what you expect in terms of mail-back basically decreases your cost or at least makes funds available to shift somewhere else.

The sampling for nonresponse follow-up probably offers the most significant cost saving in the decennial year. The figures that our cost modelers are coming up with range between \$300 to \$650 million, depending on the kinds of assumptions that one makes and depending on everything going as planned, which sometimes doesn't happen. One of the things that we want to learn in 1995 is the degree to which we can count on the methodology for using techniques like this.

Another piece of cost shifting is involving the Post Office. If they do one of the vacancy checks for us, that will save some money. It is very difficult at this point in time to do anything other than to estimate either big chunks or to present a complete estimate for a whole variety of different things. We have provided you more information on that, but roughly sampling for nonresponse follow-up is big bucks.

The increase in response rate for a user-friendly questionnaire is probably an additional opportunity to save substantial amounts, we believe.

Mr. SAWYER. Mr. Hunt.

Mr. HUNT. Well, I would agree that the items that Harry just raised, I think they are all big-ticket items. Obviously, the research has shown if you reduce the number of questions on the questionnaire alone you would save about half a billion dollars. And if you combine that with making the questionnaire user friendly, the savings probably would be enhanced somewhat.

And certainly if we can use sampling for nonresponse follow-up, that offers a potential of almost another half a billion in savings.

And working with the Postal Service again offers anywhere from \$160 to up to possibly \$200 million dollars in savings. And that operation and the "vacant, delete" operation in 1990 cost \$317 million dollars.

In 1990, I believe, we missed 3.5 million houses and incorrectly counted another 2 million houses, so that was a very expensive operation.

Mr. SAWYER. It is probably fair to note that it is also difficult to count lost data as savings, particularly when we are talking about reducing the size of the questionnaire.

Alternative data collection vehicles—what kind of evidence do you plan to use to weigh continuous measuring, administrative data, matrix sampling and the other kinds of techniques that you have talked about testing?

Mr. SCARR. I think with respect to the use of the administrative records, one can rather directly test the effects of the use of those methods both on the quality of the counting and the cost of the count and we will be able to do some of that in 1995.

Continuous measurement is a different ball of wax. Continuous measurement begins by really, I think, attempting to be cost neutral. Because it basically says you are going to take most—take the items that traditionally in the census have been—at least one model does—have been associated with the long form, spread them over the decade, and again talking to the agencies about what level of information is needed.

We have some proposals and some models for what we believe might be a cost-neutral, continuous-measurement system, that is cost neutral to what we estimate a traditional census would cost. But those are at this stage of the game being developed. And I think that it is clear that though we might be able to do a limited test of continuous measurement methodology in the decade of the nineties, that that is sort of an off-line activity but it foreshadows such a radical revision—excuse me, a fundamental revision—of the statistical system that it is almost a different ball of wax.

Mr. SAWYER. And it is awfully difficult to test a long-term method with a short-term test?

Mr. SCARR. Exactly.

Mr. HUNT. I would agree, I think continuous measurement offers a great deal of potential and I would urge that we continue studying it. I, for one, believe that what we are really talking about here is not just changes to the decennial census—that is important for our immediate effort—but we really need—eventually as a corporate body, to start thinking about the whole statistical system of which, of course, the census is the centerpiece.

And I think that the use of administrative records are in line, and worth continuous testing. There may be some uses in the short run, but it is going to take a long-run view to determine how effective they could be.

We think that census reform is not something that is just going to happen in 2000. I hope what we are about here, because we can't do everything in 2000, is to have some things laid out that are important things and that will make a material difference in 2000. However, there are a lot of other things that we also need to work toward for the future.

And I guess the last thing I would mention as one of the problems on continuous measurement is—and Harry is exactly right—that if we reduce some of the content of the long form, and we invest some of those resources in continuous measurement, the cost savings may not be significant. And I think you have—I hate to use the word “political”—but we have the political or optics issue that the comfort level of users of the data is not going to be there for them. One thing that we know, we will have a census. But users are not always sure that we will have all these other analyses at times when funds are difficult or tight. Those are considerations that we must be aware of from the customer point of view.

Mr. SCARR. And I want to make clear that we are planning some sort of continuous measurement test in the 1996-97 timeframe. So we won't be going into it completely cold. But nevertheless, it is a different order of magnitude.

Mr. SAWYER. The last two questions about larger cost questions and the efficacy of alternative data-gathering methods really go to the heart of the concerns expressed by colleagues on the Appropriations Committee that I take seriously. We need to demonstrate the seriousness of our interest in those areas.

And No. 2, I can only emphasize the importance of getting beyond that 10-year horizon. It is the single, most limiting factor in the whole statistical system in the United States.

Mr. Wynn.

Mr. WYNN. Thank you, Mr. Chairman.

I apologize for arriving late. This may have been covered.

Mr. Hunt, with regard to the reduction in the number of questions being one element of cost savings, where are we with that? Is that actively being contemplated?

Is it going to be tested in 1995? What questions are likely not to be asked?

Mr. HUNT. Let me give you part of the answer and perhaps Harry can give you the other part of it.

As we understand it, the 1995 test will include a streamlined questionnaire, the short form planned right now for testing in 1995 will have six questions, which is, I think, about half—there were 11 in 1990. So they are cutting that.

And then in the long form, they are going to have, as I recall, the six questions that are on the short form, plus a couple of other questions that they are going to be asking everybody on the long form, and then 26 questions that they will put on four or five other matrixes. But not all of those 26 questions will not be on every long form. They will try to do that on a matrix basis.

Did I get that right, Harry?

I understand that there are 11 questions asked in 1990 that they have tentatively decided would not be on the form in 1995, but Harry is remaking the point that this is a test and whatever they have done with the questions and the content issue, does not represent their final judgment as to what eventually the content will be.

Under the law, the Secretary of Commerce is required to report to the Congress in April of 1997, the subjects or content that will be on the census. The next year, April of 1998, the Secretary of

Commerce is required to submit to the Congress the actual questions and specific wording that will be used on the form.

One of the problems that we have with the tempo of this effort is that reducing the number of questions on the form is going to be one of the more controversial issues, but not the only controversial issue. You are talking about moving to using sampling for nonresponse; something we think is useful and will be very good, if we can work that through.

But there are a lot of other things that will be up there on the agenda. So my argument is that we are planning a census that is different from previous censuses and we are dealing with changes of a significant magnitude, changes that require good, solid information being put in the public domain as soon as possible. There is going to be a lot of contentiousness on some of these proposals and a lot of concern. And I think the Bureau is really the excellent organization to do that. They have credibility. They do this stuff better than anyone. And their analysis, when it comes out, is usually very good. They need to get their analyses out there so that all of us who are involved in this, the Congress and everyone else, can make informed decisions. That is very, very important.

If we wait until the latter part of the decade, I am worried that we may run into problems of getting sufficient consensus to make the judgment as to what will or will not be on the form.

Mr. WYNN. That is the question I have. If I understand you, you are going to test using the short form, reduced questions in 1995, but there is no guarantee that that approach will be used in 2000?

I guess my question is what is the point to do this and spend the money that is involved in doing this and then not have it bound over for 2000? It doesn't seem to make a lot of sense, particularly if as you suggest it results in significant cost savings.

Wouldn't it make more sense to get some sort of agreement within the Department of Commerce now that we are going to do a shorter form and this is the content that we are going to do, test it in 1995, and then be ready to move in 2000?

Mr. HUNT. Well, obviously, I would be interested and like to see greater consensus earlier on, because there is a lot of work I really think that needs to be done in the long run to pull this off. So the earlier we make some decisions, even if we come up with several different scenarios that we want to test, that would be valuable.

In terms of what they hope to get out of it, Harry is probably a better person to answer that question in terms of the 1995 test.

Mr. SCARR. I think the important thing that I want to reemphasize is that there is a difference between the 1995 test and the 2000 Census, as you pointed out, Mr. Wynn. But there is a need for some kind of content to be used to test different methodologies and that is the purpose of the 1995 test. It is focused much more on the way you collect the information, and whether you basically ask a whole bunch of questions or try to bust up the questions that you traditionally ask on the long form; that is the purpose of the content there.

But I would like Mr. Tortora to comment on this.

Mr. TORTORA. I think really it is very important for us to try this methodology in 1995. We are not sure it will work. And so I think we have a "go/no-go decision" in 1995. If it works, then we know

we have it potentially available in 2000, but we are not sure at this point that it will work for 2000. We could make that final decision.

Mr. WYNN. One other question related to that. Would it be helpful to legislatively roll the date by which the Secretary of Commerce provides Congress with the final question, would it be helpful to roll that date forward?

Mr. HUNT. Well, I think one of the options that is being considered is moving census day back. That is one of the options that the Bureau is thinking about. Instead of April 1, move it back in the year. An earlier date would give them more time.

Mr. WYNN. But instead of having final questions submitted in 1998, why not move it forward?

Mr. HUNT. I guess that is conceivably possible if there was a change in the law.

Mr. WYNN. Would it be helpful?

Mr. HUNT. Yes, it would be. However, the law doesn't say that the Bureau can't do it earlier. They don't have to wait until 1998.

Mr. WYNN. I understand that. But if you have a deadline, human nature is such that you move right to the deadline.

Mr. HUNT. Mr. Kaufman has a point here, too, on the 1990 experience, in particular, related to the testing of the census questionnaire before the 1990 Census.

Mr. KAUFMAN. Mr. Hunt has mentioned the statutory dates of presenting the subjects and the questions in 1987 and 1988, but this did not result in the actual questionnaire used for the 1990 census.

The historical experience was that even after they had a dress rehearsal in 1988, which used a streamlined form, there was a significant change to the form after 1988. So this—

Mr. WYNN. Content? Based on content changes in the questions?

Mr. KAUFMAN. The questions were changed in the basic short form questionnaire, from a streamlined form to one that almost doubled in size for the 1990 Census. So the point I am making is that although 1988 was the date for presentation to committees in Congress it was not a final date. The final debate continued.

Mr. WYNN. Why don't we move the final date forward so that we can get something a little more conclusive earlier?

Mr. KAUFMAN. Earlier would be better.

Mr. HUNT. That is pretty much what we have been saying. I don't know the technicality, if you have to change the law. The law doesn't say that it couldn't be done earlier.

Mr. SCARR. If the Congress moves the date earlier, then we will meet that date, but there are complications in trying to put together a questionnaire that reflects consensus in the executive branch and between the executive branch and the legislative branch with respect to the expressed needs and concerns of State and local government. But as I have indicated, if it is moved forward, we will meet that, too.

Mr. TORTORA. There is another issue in this with respect to moving that date or changing that date also, and that is if, in fact, continuous measurement turns out to be a feasible option for collecting content data, and that may be a real conflict with respect to content coming out of the zero year of 2000 Census and content coming out of a continuous measurement survey.

Mr. WYNN. One other question. The Chairman talked about alternative data collection vehicles. We are hearing a lot about the information superhighway. Would that be a possible vehicle, particularly where you have nonresponse? Is that being contemplated?

Mr. SCARR. What is being examined is the possibility of the use of various kinds of administrative records that may be forthcoming with the development of the administration's information highway initiatives, but it is not very much beyond the conceptual stage at this point. But I would assume that the possibility exists.

Mr. WYNN. By 2000?

Mr. SCARR. Not by 2000. For example, one—in the health care legislation that the President has submitted, there are some requirements for identification materials that people would have. That offers some possibility with respect to an administrative records system, but it will take a lot of doing, but that becomes practical in a statistical sense. But I think that relates to what the Chairman indicated we should be considering for 2010 and 2020. And I think the National Academy Panel, your panel, the Schultze panel basically talks about an administrative records system from the standpoint of thinking 20 and 30 years ahead, because that is the lead time it would take to make use of those kinds of things.

Mr. SAWYER. Thank you, those were useful questions.

Let me cover a couple of areas.

The personnel exemptions that we used in 1990, do we have any sense of how effective those were and can you give me any sense of what kind of additional or alternative personnel requirements you might face in 2000?

Mr. SCARR. Well, I think we were able to get the same kind of personnel exemptions in 2000, Mr. Chairman, thanks to you in large measure, through Public Law 101-86, which was the Federal Military Annuity Law, I think that that would—

Mr. SAWYER. It probably pops from the lips of almost everyone.

Mr. SCARR. Yes, it is right here in my mind. But basically what it does is it makes available another pool of very qualified enumerators to draw from. And that is the principal advantage of that kind of legislation. Just—and in selected areas of the country this makes a lot of difference; wherever there are a lot of retirees. So we believe that legislation is useful. And we are hopeful that we will have the same kind of exemptions, and so on, for the year 2000.

Mr. SAWYER. You wouldn't see the need for expansion or more generalized use?

Mr. SCARR. We would probably want to look into that. Anything in that direction is helpful.

Mr. SAWYER. Mr. Wynn raised a question about the use of administrative records, and particularly as we think about the example you mentioned with health care and the identification cards, the sharing of addresses raises a whole series of questions of cost, but more importantly, sustaining the very, very high degree of comfort the public has with regard to the confidentiality of handling of census data.

I am, on the one hand, concerned about that with regard to health care information, but that isn't my point. What kind of confidentiality standards do we hope to sustain?

Mr. SCARR. That is a very difficult issue for the Bureau, but I think on balance that being able to share address lists with State and local governments under very controlled conditions will help to respond to or anticipate a lot of the criticisms that occurred in 1990.

We have some draft legislation that we have forwarded to the Department of Commerce that attempts to include enough safeguards so that people would feel comfortable with that. That is a great concern at the Bureau.

It is critically important that we maintain our reputation for the confidentiality of data. I think it is important to note that it is only addresses that will be shared. In a sense, one of the reasons why we came to the conclusion that we might want to move forward in this direction and we might want to run this sort of risk, which we feel is minor at this point, is because what you are sharing is, with some exceptions, what any citizen would see if he walks down the street; house numbers and that kind of thing. That is the kind of information we are talking about. That is the level of detail.

It is a real concern. But we think it would be helpful. And we think—in terms of the process we have initiated, one of the things that we have heard quite strongly from State and local people is that, you know, you have got to trust us; you want us to help you, so you have got to trust us.

Why can't we help you identify those housing units that you have missed directly? Why do we have to go through this sort of complicated scenario where we have to show you ours but you can't show us yours. That is one of the things that we were working on.

Mr. SAWYER. You talk about moving the date itself, the date for the census. Do we run into difficulties with data comparability?

Mr. SCARR. Can you account for it?

Mr. TORTORA. Certainly for a lot of data, reflecting content in the zero year, it refers to the past year, so that in theory should remain comparable. Of course—

Mr. SAWYER. Anything in terms of seasonal differences from one part of the country to another and the shifts in seasons and things as fundamental as weather?

Mr. TORTORA. We believe right now that since we rely so much on the mail, and in fact we will collect more via mail in 2000, that that will have a minimal impact.

Mr. SCARR. We think any of that impact would be offset by the fact that we are avoiding the first of the month, which is when everybody moves. We are avoiding April Fools Day and we are avoiding being in the month that income taxes are filed, which is another thing that the people are doing for the Government.

We believe that it is probably likely that there will be more college students in college rather than on college break. And so if you take those factors, plus the fact of being able to gain a little time to make sure that you can finish everything in terms of the statutory deadlines, we believe that those factors offset any minor incomparability that might exist.

Mr. SAWYER. I have got two more questions.

The first is the concern that our friends in the Appropriations Committee have expressed, the carrying over and expenditure of dollars and the explanation for the ability to carry out planning ef-

forts for the test with funds that were recovered from unspent money from previous years. Can you talk for a moment about where the money came from and your confidence that this is a one-time occurrence and really more fortuitous than anything else?

Mr. SCARR. Mr. Chairman, I prefer to provide you with a written response from our budget people, but I can give you some indication that these are funds that were permitted to make purchases from the periodics and census program and then the purchases aren't made and the funds are discovered.

[The information referred to follows:]

#### DEOBLIGATION OF PRIOR YEAR FUNDS—BUREAU OF THE CENSUS

During the period from October 1992 to December 1993, the Census Bureau identified and liquidated \$48 million of Periodic Census and Program funds.

This table shows the almost 10,000 deobligation transactions by dollar amount groups:

[Dollars in millions]

Transaction value	No of trans-actions	Deobligations
\$500,000 & above	18	\$14.9
400,000-\$499,999	3	1.3
300,000-\$399,999	10	3.2
200,000-\$299,999	25	5.6
100,000-\$199,999	33	4.1
50,000-\$99,999	80	4.8
0-\$49,999	9,267	11.1
Routine processing	(1)	2.5
	9,436	47.5

<sup>1</sup> Unknown

Here are a few examples of specific deobligations:

In 1988, the Bureau initiated the construction of a new computer facility in Charlotte, North Carolina to support the 1990 Decennial Census. As a contingency, the Bureau in 1989 entered into a \$1,150,000 contract to provide backup computer support. Services totalling \$250,000 were used and we deobligated \$900,000 in 1993.

A printing job in September 1989 was estimated to cost \$921. The obligation was erroneously recorded as \$921 thousand; a \$1,000 payment was made in November 1990. The \$920 thousand balance was deobligated in August 1993.

A \$707,000 Miscellaneous Obligation Record (MOR) was recorded in September 1991 for leasing and preparation of office space in our regional offices for automated mapping equipment and staff. The costs were incorrectly recorded against the Bureau's regular office space obligations; this MOR of \$707,000 was deobligated in late 1993.

Four factors contributed to this situation:

Antiquated Accounting System. The Census Bureau's current automated accounting system, initially designed in the late 1950s as a card system, requires extensive human intervention to produce accurate, but not timely, accounting reports. The Census Bureau was precluded in the 1980s from developing or acquiring a replacement accounting system while DOC explored centralizing all financial activities. Procurement of a new system, in concert with the DOC Chief Financial Officer and with other DOC Bureaus, is underway. This system will be operating in the Census Bureau in FY 1997.

Cyclical Spending. The peaking and spending bulge(s) particularly for the decennial, and the lagging of close-out activities tend to create a transaction burden on the accounting system. The system under design should minimize this problem.

Unemployment Compensation. With two changes in law from 1981-1990, we have had difficulty predicting the volume and timing of claims and concomitant estimating of cost.

Staff. Lack of Finance staff during the high work load period caused inappropriate accounting actions to occur. A well-trained staff is now in place and operating effectively.

The Bureau is now left with the challenge of developing a systemic "fix" that will minimize the likelihood of again being seen as still "hiding money." The Bureau's Acting Director initiated the first step in this direction on January 31, 1994 (see attachment #1). The Bureau initiated the sound practice of quarterly reviews of prior-year obligations (see attachment #2). The first review is underway and receiving priority attention. This work will likely result in another \$1-2 million in deobligations as of the end of March 1994.

The proposed Census Bureau reorganization recognizes the critical need for improved financial management. It provides for a new Chief Financial Officer position and reaffirms the need for a Comptroller responsible for both Finance and Budget.

Clearly, the effort to have in place a modern accounting system prior to the 2000 decennial will be the best insurance to assure timely and accurate accounting and reports for management and Congressional decisions.

A General Accounting Office team is now at the Census Bureau reviewing the work described above. This team's report will help you and the Bureau to know that the cited problems have been dealt with and that recurrence is unlikely.

Mr. SAWYER. I think it would be important to share that information in as firm a manner as possible. The execution of this test dwarfs the problems we face in planning for it.

Mr. Hunt, are we going to make it and get there? Just forget that your friend Harry is sitting there.

Mr. HUNT. I am an optimist and very hopeful, and with that in mind, I would simply say it is going to be difficult. It is not impossible, but it is certainly going to be difficult.

We are talking about testing a wide range of important modifications. I wouldn't say radical either, but modifications to the census methodology, and it is going to take careful planning and execution, et cetera.

They have not given themselves, in my opinion, a lot of wiggle room. Here we are in the 4th year, and 13 months from now we are going to have a 1995 test census taken. And so everything has got to work like clockwork. The Bureau has got to get a sense of urgency to get this done. That bothers me a bit, because I think the Bureau could have possibly done more in these earlier years. The Bureau has what I call a treasure trove of information from the 1990 Census PES, that I believe could have been used to run a number of tests.

For example, I am looking at the effects of sampling for nonresponses, et cetera, which probably could have better positioned all of us in terms of what a test might look like or defining the test for 1995. I think we have lost some ground.

I don't want to be pessimistic, but I think it is going to take an awful lot of work. We are talking about major changes here, and as this becomes more and more apparent, we have got to make sure that the needed information and data are on the table so that people feel and recognize that the information is there and it is fairly presented. All policymakers and the decisionmakers should be singing from the same sheet. Eventually we are going to have to get to consensus if we are ever going to get the job done.

And there is always going to be a group of folks that feel left out, but at least, hopefully, they will have a respect for the process—that it was an informed process. Their issues were heard. And at least, perhaps unfortunately for them, while they didn't win, at least the decision wasn't arbitrary or capricious.

There is a lot to be done. And a sense of urgency is still needed.

Mr. SAWYER. Anything that you would like to add?

Let me make one final observation.

I fully understand your concern about uncertainty with regard to sampling that many people express, but I think it is important to understand just the point that both of you have made earlier on, and that is the uncertainty exists at small area levels, no matter what methodology is used.

It exists with sampling, it exists with absolute certainty with head counts. And our goal as much as possible ought to be to reduce that to a minimum and improve the quality of the count as much as we can.

Thank you very much for your time.

With no other business, we stand adjourned.

[Whereupon, at 11:45 a.m., the subcommittee was adjourned.]







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